

# WINTER 97/98 SHORT FORM DESIGNERS' GUIDE

## Applications Selection Guides and New Products Update



 **ANALOG  
DEVICES**



# WINTER 97/98 SHORT FORM DESIGNERS' GUIDE

© Analog Devices, Inc., 1998  
All Rights Reserved

## HOW TO GET INFORMATION FROM ANALOG DEVICES

Analog Devices publishes data sheets and a host of other technical literature supporting our products and technologies. Follow the instructions below for worldwide access to this information.

### FOR DATA SHEETS

(CD-ROM contains data sheets current from 1/30/98.)  
**U.S.A. and Canada**

1. Fax Retrieval. Telephone number 800-446-6212

Call the above number and use a faxcode corresponding to the data sheet of your choice for a fax-on-demand through our automated AnalogFax™ system. Data sheets are available 7 days a week, 24 hours a day.

a. Product/faxcode cross reference listings are available by calling the above number and following the prompts. There is a 5-page index with just part numbers, faxcodes, page count and revision for each data sheet. There is also a 19-page index sorted by product type with short descriptions.

b. Faxcodes for products are listed in the last column of each Selection Guide and at the end of each New Product description.

2. World Wide Web & Internet

a. Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.

b. We also provide extensive DSP literature on an Internet FTP site.

Type: <ftp://ftp.analog.com> or <ftp://137.71.23.11>. Log in as **anonymous** using your e-mail address for your password.

3. Analog Devices Literature Distribution Center

a. Call 800-262-5643 and select option two from the voice prompts, or

b. Telephone 781-329-4700 for direct access, or

c. Fax your request to 508-626-0547.

4. DSP Bulletin Board Service

For the latest software updates, call 781-461-4258, 8 data bits, 1 stop bit, no parity, 300 bps to 14.4 kbps.

### Europe and Israel

1. Fax Retrieval. Telephone number 49-8765-9300-xxxx, where xxxx is the faxcode. For a list of faxcodes dial 49-8765-9300-1000. (In this instance, 1000 is the code for the faxcode cross-reference listing.) The faxcodes are the same as those in this book.

2. World Wide Web

Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.

3. Analog Devices Sales Offices

Call your local sales office and request a data sheet. A Worldwide Sales Directory including telephone numbers is listed on pages 293 and 294.

4. DSP Support Center. Fax requests to \*\*49-89-57005-200 or e-mail

[dsp.europe@analog.com](mailto:dsp.europe@analog.com). The Bulletin Board Service is at \*\*43-1-8887656.

### Australia and New Zealand

1. Fax Retrieval. Telephone number (61) 59 864377. Follow the voice prompts and use the faxcodes in this book to request the data sheet of your choice.

### India

1. Call 91-80-526-3606 or fax 91-80-526-3713 and request the data sheet of interest.

### Other Locations

1. World Wide Web

Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.

2. Analog Devices Sales Offices

Call your local sales office and request a data sheet. A Worldwide Sales Directory including telephone numbers is listed on pages 293 and 294.

### FOR OTHER TECHNICAL PUBLICATIONS

An abundant variety of technical publications is available from Analog Devices. A descriptive listing of this literature begins on page 285. To request any of these publications, in the U.S.A. follow the instructions given above to contact the Analog Devices Literature Distribution Center. In other locations, contact your local sales office.

### TECHNICAL SUPPORT AND CUSTOMER SERVICE

In the U.S.A. and Canada, please call (800)-ANALOGD, (262-5643). For technical support on all products, select option one, then select the product area of interest. For price and delivery, select option three. For literature and samples, select option two.





## DESIGNERS' CD REFERENCE MANUAL

### FULL-LENGTH DATA SHEETS!

Because of the large number of products available from Analog Devices, we have designed this Short Form Guide as a quick and convenient reference to primary specifications on all of our products. A complete data sheet set is now available on CD-ROM, on the World Wide Web at <http://www.analog.com> and on AnalogFax™ at (1-800-446-6212).

#### The new CD-ROM includes:

- FULL-LENGTH DATA SHEETS • SELECTION GUIDES • SELECTION TREES • APPLICATION NOTES • SPICE MODELS
- 3 V SUPPLY/PCMCIA PARTS LISTS • COMPETITOR CROSS-REFERENCE • SALES OFFICE LISTINGS

To receive your new **Designers' CD Reference Manual**, please affix your business card; otherwise, complete the information on this card and mail to us. Your CD-ROM catalog will be sent by return mail within two weeks.

Name (Mr./Ms./Mrs.) \_\_\_\_\_ Title: \_\_\_\_\_

Company \_\_\_\_\_

Division/Mail Stop \_\_\_\_\_

Street Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Country \_\_\_\_\_ Telephone \_\_\_\_\_ Ext. \_\_\_\_\_

Email Address \_\_\_\_\_ **CODE 5**

1. Is your request in support of an active design? ☐ Yes ☐ No ☐ Unknown
2. Which of the following best describes your design stage?
 

<input type="checkbox"/> Requirements Definition	<input type="checkbox"/> Component Identification	<input type="checkbox"/> Prototyping
<input type="checkbox"/> Redesign	<input type="checkbox"/> Research for a Future Project	<input type="checkbox"/> Unknown
3. What is your best estimate of when your new product will go into production?
 

<input type="checkbox"/> 0-3 Months	<input type="checkbox"/> 3-6 Months	<input type="checkbox"/> 6-12 Months	<input type="checkbox"/> More than 12 Months	<input type="checkbox"/> Already in Production	<input type="checkbox"/> Unknown
-------------------------------------	-------------------------------------	--------------------------------------	--	--	----------------------------------



## DESIGNERS' CD REFERENCE MANUAL

### FULL-LENGTH DATA SHEETS!

Because of the large number of products available from Analog Devices, we have designed this Short Form Guide as a quick and convenient reference to primary specifications on all of our products. A complete data sheet set is now available on CD-ROM, on the World Wide Web at <http://www.analog.com> and on AnalogFax™ at (1-800-446-6212).

#### The new CD-ROM includes:

- FULL-LENGTH DATA SHEETS • SELECTION GUIDES • SELECTION TREES • APPLICATION NOTES • SPICE MODELS
- 3 V SUPPLY/PCMCIA PARTS LISTS • COMPETITOR CROSS-REFERENCE • SALES OFFICE LISTINGS

To receive your new **Designers' CD Reference Manual**, please affix your business card; otherwise, complete the information on this card and mail to us. Your CD-ROM catalog will be sent by return mail within two weeks.

Name (Mr./Ms./Mrs.) \_\_\_\_\_ Title: \_\_\_\_\_

Company \_\_\_\_\_

Division/Mail Stop \_\_\_\_\_

Street Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Country \_\_\_\_\_ Telephone \_\_\_\_\_ Ext. \_\_\_\_\_

Email Address \_\_\_\_\_ **CODE 5**

1. Is your request in support of an active design? ☐ Yes ☐ No ☐ Unknown
2. Which of the following best describes your design stage?
 

<input type="checkbox"/> Requirements Definition	<input type="checkbox"/> Component Identification	<input type="checkbox"/> Prototyping
<input type="checkbox"/> Redesign	<input type="checkbox"/> Research for a Future Project	<input type="checkbox"/> Unknown
3. What is your best estimate of when your new product will go into production?
 

<input type="checkbox"/> 0-3 Months	<input type="checkbox"/> 3-6 Months	<input type="checkbox"/> 6-12 Months	<input type="checkbox"/> More than 12 Months	<input type="checkbox"/> Already in Production	<input type="checkbox"/> Unknown
-------------------------------------	-------------------------------------	--------------------------------------	--	--	----------------------------------





NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

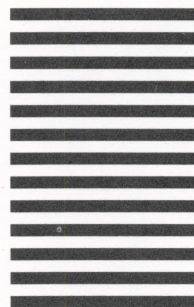
**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 56 FRAMINGHAM, MA

POSTAGE WILL BE PAID BY ADDRESSEE



P.O. BOX 9367  
FRAMINGHAM, MA 01701-9835



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 56 FRAMINGHAM, MA

POSTAGE WILL BE PAID BY ADDRESSEE



P.O. BOX 9367  
FRAMINGHAM, MA 01701-9835





# TABLE OF CONTENTS

<b>GENERAL INTRODUCTION</b> .....	2
-----------------------------------	---

<b>NEW PRODUCT APPLICATION IDEAS</b> .....	3
--	---

## TREES AND GUIDES

General Purpose Components – Overview .....	26
Application Specific Circuits – Overview .....	27

A/D Converters	
Selection Trees .....	28
Selection Guides .....	39
Amplifiers	
Selection Trees .....	53
Selection Guides .....	63

Analog Computation Circuits	
Selection Tree .....	78
Selection Guides .....	79

Analog/Digital Audio	
Selection Trees .....	81
Selection Guides .....	86

ATE, Time Domain & Laser Diode Drivers	
Selection Tree .....	94
Selection Guides .....	95

Communications	
Selection Trees .....	97
Selection Guides .....	99

Comparators	
Selection Tree .....	102
Selection Guides .....	103

D/A Converters	
Selection Trees .....	105
Selection Guides .....	113

Digital Signal Processing	
Selection Trees .....	122
Selection Guides .....	127

Interface	
Selection Trees .....	131
Selection Guides .....	133

LANs: Local/Wide Area Networks	
Selection Tree .....	136
Selection Guide .....	137

Motion Control	
Selection Tree .....	138
Selection Guide .....	139

Multiplexers	
Selection Tree .....	140
Selection Guides .....	141

μProcessor Supervisory Circuits & Reset Generators	
Selection Trees .....	143
Selection Guides .....	148

Power Management	
Selection Trees .....	152
Selection Guides .....	158

## References

Selection Trees .....	164
Selection Guides .....	165
Sample/Track & Hold Amplifiers	
Selection Tree .....	167
Selection Guides .....	168

Sensors & Signal Conditioners	
Selection Trees .....	169
Selection Guide .....	171

Switches	
Selection Tree .....	176
Selection Guide .....	177

V/F & F/V Converters	
Selection Tree .....	178
Selection Guide .....	179

Video and Multimedia	
Selection Tree .....	180
Selection Guides .....	181

## NEW PRODUCTS

A/D Converters .....	184
Amplifiers .....	192
Communications .....	196
D/A Converters .....	198
Digital Signal Processing .....	201
Interface: Line Receivers & Transmitters .....	203
LANs: Local/Wide Area Networks .....	204
Motion Control .....	206
μProcessor Supervisory Circuits & Reset Generators .....	207
Power Management .....	210
Sensors & Signal Conditioners .....	216
Switches .....	218
Video & Multimedia .....	221

## APPENDIX

Ordering Guide .....	224
Package Options .....	226
Evaluation Boards .....	252
Product Families Still Available .....	259
Substitution Guide for Obsolete Products .....	260
Technical Publications .....	285
Worldwide Sales Directory .....	293
Product Index .....	298



# GENERAL INTRODUCTION

Analog Devices designs, manufactures and sells sophisticated electronic components and subsystems for use in real-world signal processing. Over thirteen hundred standard products are produced in manufacturing facilities located throughout the world. These facilities encompass all relevant technologies, including Submicron CMOS, BiMOS, complementary bipolar and standard bipolar, each optimized for specific attributes. State-of-the-art technologies have been utilized (and in many cases invented) to provide timely, reliable, easy-to-use advanced designs at realistic prices; for instance, our Thermal Coastline SOIC package, which has lower  $\theta_{JC}$  and  $\theta_{JA}$  than the standard SOIC. Our newer products are available in surface mount packages (SOIC,  $\mu$ SOIC, SSOP and TSSOP as well as SOTs in some cases). Over thirty years of successful applications experience and continuing vertical integration ensure that these products are oriented to user needs. The ongoing application of today's state-of-the-art and the invention of tomorrow's state-of-the-art processes strengthen the leadership position of Analog Devices in standard data acquisition and signal processing products and make us the leader in high performance, mixed-signal ASICs. (See the ADMC330 as an example.)

## NEW PRODUCTS FOR 1998

Analog Devices has made significant investments in the past few years to develop major new process and design technologies that have allowed us to expand our product lines into many new areas such as video displays, digital audio (submicron CMOS), automotive (micromachining), and telecommunications (25 GHz bipolar). These new capabilities have also allowed us to offer higher performance and lower cost products in our traditional data acquisition and signal processing lines.

The primary thrust for new products is to cover all aspects of the rapidly growing markets of communications and computer audio and video. This includes a new thrust in power management, high speed amplifiers and mixed-signal/DSP products for GSM video processing and motor control.

Most of the new products now coming from Analog Devices are designed to operate on a single 3-volt or 5-volt supply, in line with current system requirements, notably lower power supply current consumption.

## TECHNICAL SUPPORT

Our extensive technical literature discusses the technology and the applications of products for precision measurement and control, and dynamic signal processing. In addition to tutorial material and comprehensive data sheets, we offer application notes, application guides, technical handbooks and several serial publications. *Analog Dialogue*, our technical magazine, provides in-depth discussions of new developments in analog and digital circuit technology as applied to data acquisition, signal processing, control and test, while our DSP magazine, *DSPatch*<sup>®</sup>, provides the latest technical updates in this quickly changing market area.

Also, our CD ROM offers data reference catalog information along with parametric search engines, application notes, spice models, etc. Analog Devices also provides in-depth technical support through field applications engineers, our technical sales force, as well as a network of applications engineers available at our factory locations to discuss your needs. A call to our central office in Norwood, Massachusetts, at 1-800-ANALOGD (262-5643) will be directed to the engineer most closely associated with your interests. We have also installed a World Wide Web site on the Internet and a fax-on-demand system to provide current in-depth technical information.

## SALES OFFICES

Backing up our design and manufacturing capabilities and our extensive array of publications is a network of sales offices, representatives and distributors throughout the United States and most of the world. They are staffed by experienced sales and applications engineers, and many of them maintain a local stock of Analog Devices products. Our Worldwide Sales Directory appears on pages 293 and 294.

## RELIABILITY

The manufacture of reliable products is a key objective at Analog Devices. The primary focus is the company-wide commitment to Total Quality Management (TQM). In addition, we maintain facilities that have been qualified under such standards as MIL-M-38510 (Class B and Class S) for ICs in the U.S. and MIL-STD-1772 for hybrids. Our major facilities have also been certified to ISO-9000 and QS9000.

## PRODUCTS NOT FOUND IN THE SELECTION GUIDES

For maximum usefulness to designers of new equipment, we have limited the contents of selection guides to products most likely to be used for the design of new circuits and systems. If the model number of a product in which you are interested is not in the selection guides, turn to page 259 at the back of this volume where you will find a list of older products for which data sheets are available upon request. On page 260, you will find a guide to substitutions for products no longer available, as well as those P/N that are on lifetime buy.

## PRICES

Accurate, up-to-date prices are an important consideration in making a choice among the many available product families. Since prices are subject to change, current price lists and/or quotations are available upon request from our sales offices.

DSPatch and Analog Briefings are registered trademarks of Analog Devices, Inc.

All trademarked Analog Devices products are the property of Analog Devices, Inc. All other trademarks are the property of their respective holders.

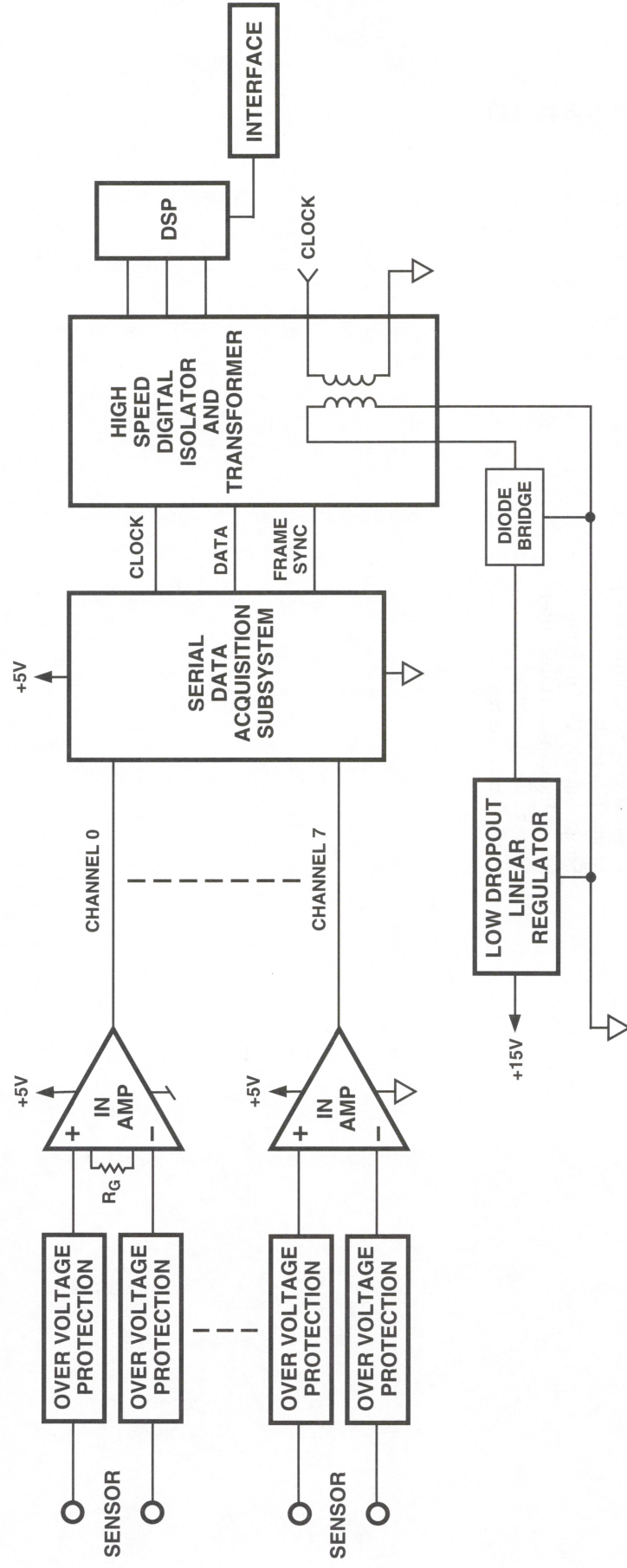


## CONTENTS

A/D Isolated Data Acquisition System .....	4
ADSL .....	5
Base Station: IF Sampling Diversity Receiver .....	6
Base Station: Multimode/Multichannel IF Sampling Receiver .....	7
Base Station: Multimode/Multichannel Transmitter .....	8
Base Station Receiver: Phased Array .....	9
Base Station Transmitter: Phased Array .....	10
Complete Professional Studio .....	11
Computer Graphics .....	12
Data Acquisition System, PC Board .....	13
Digital Camera .....	14
Fax Modem Sound Card .....	15
Home Video Editing .....	16
Isolated Actuator Control .....	17
Isolated Process Control Loop .....	18
Motor Controller .....	19
Single Supply Weigh Scale .....	20
Smart Industrial Transmitter .....	21
Storage Oscilloscope .....	22
Surveillance System .....	23



## A/D Isolated Data Acquisition System

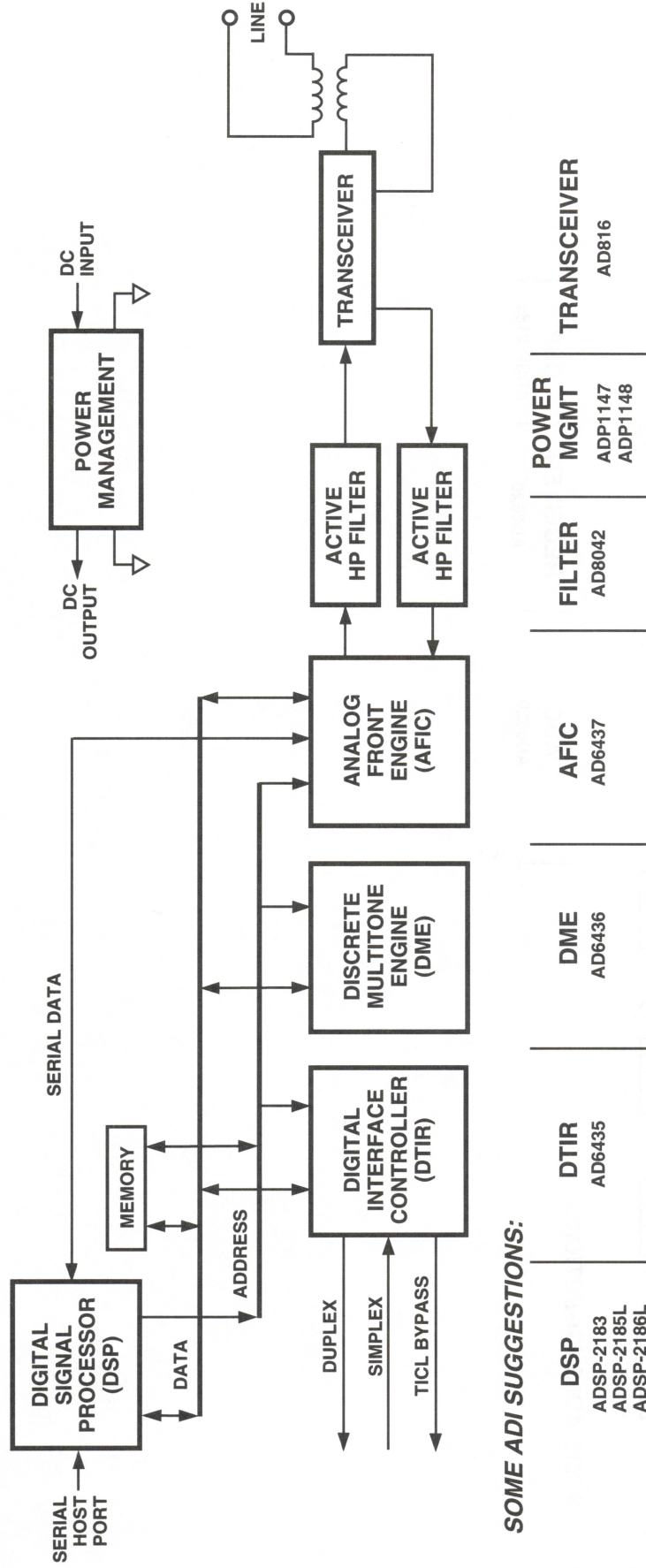


### SOME ADI SUGGESTIONS:

SENSORS	CHANNEL PROTECTOR	INSTRUMENTATION AMPLIFIERS	LOW DROPOUT REGULATOR	DAS SUBSYSTEMS	ISOLATION	DSP	INTERFACE
AD22100 AD22103 ADT45 ADT50 TMP35 TMP36 TMP37	ADG467	AD623 AMP04	ADM663	AD7856 AD7858 AD7890 AD7891	AD260	ADSP-21xx	ADM20x ADM23xE ADM48x

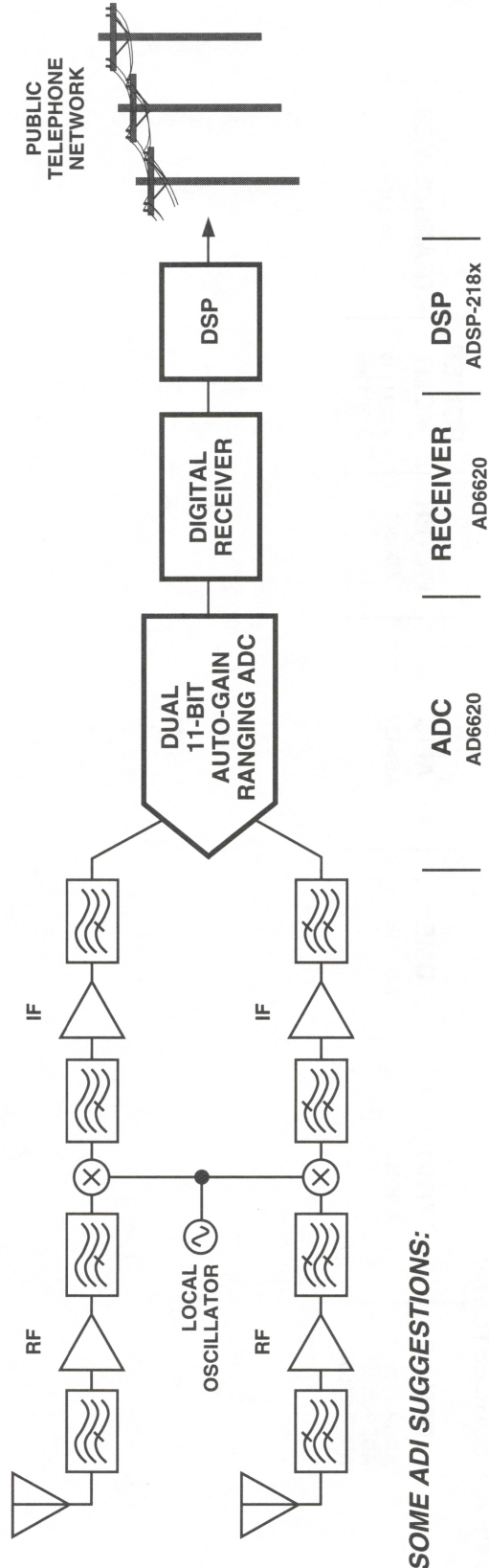


## ADSL





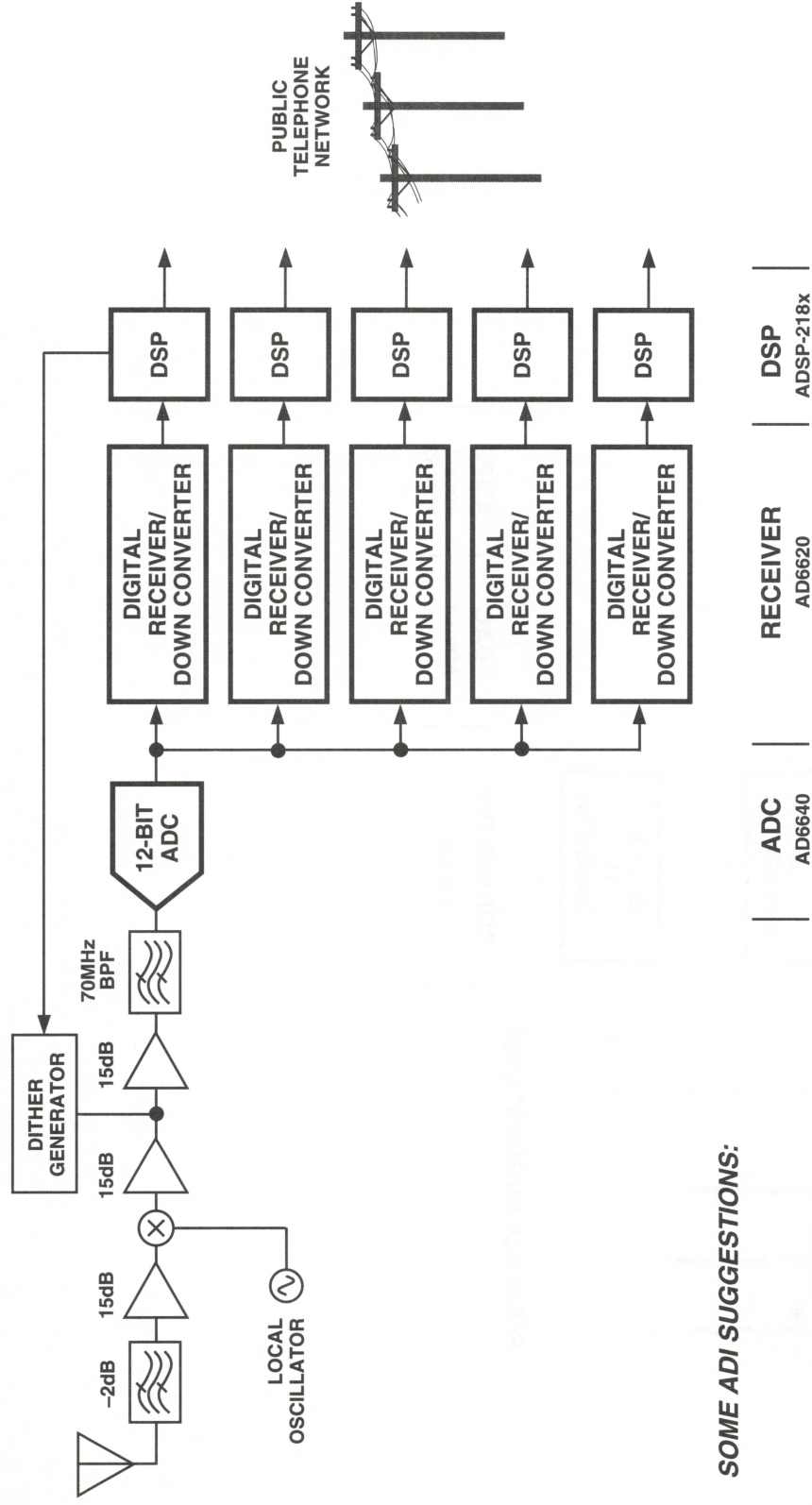
## Base Station: IF Sampling Diversity Receiver



SOME ADI SUGGESTIONS:



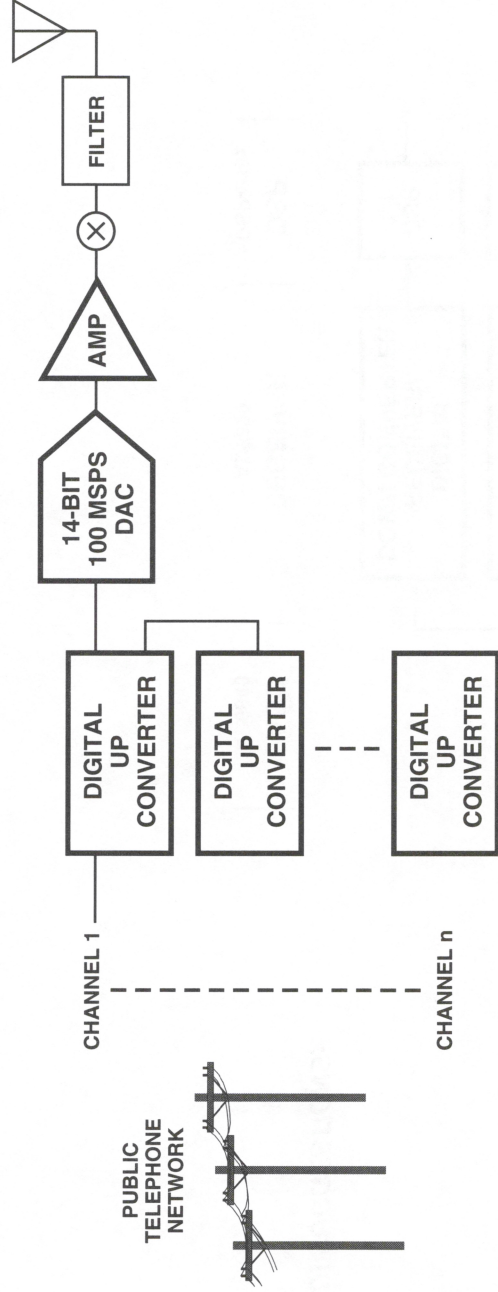
## Base Station: Multimode/Multichannel IF Sampling Receiver



SOME ADI SUGGESTIONS:



## Base Station: Multimode/Multichannel Transmitter

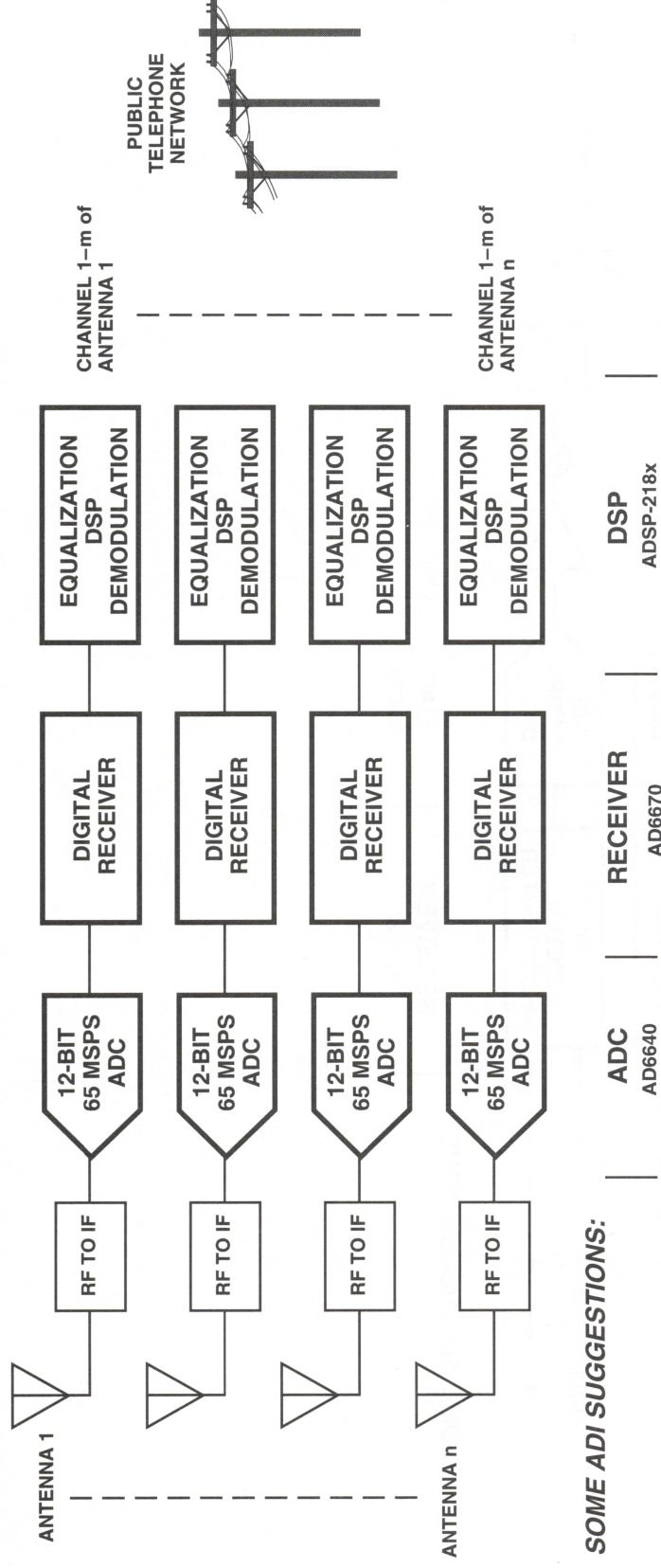


SOME ADI SUGGESTIONS:

CONVERTER	DAC	AMPS
AD6622	AD9764	AD9631 AD9632

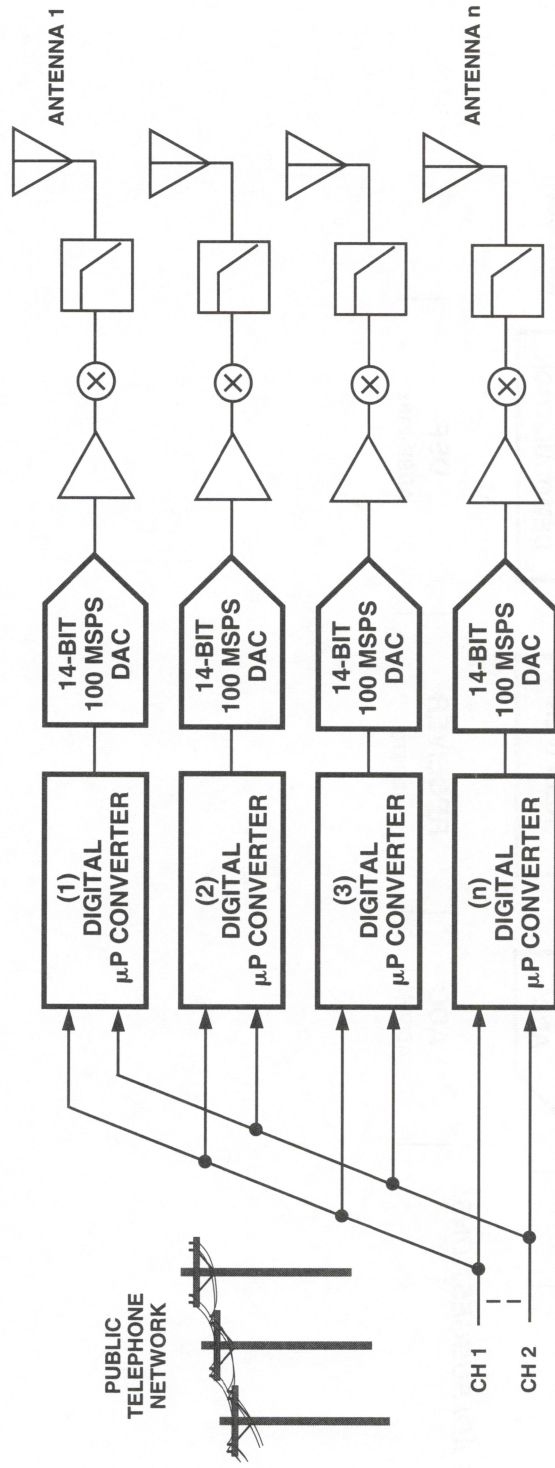


## Base Station Receiver: Phased Array





## Base Station Transmitter: Phased Array

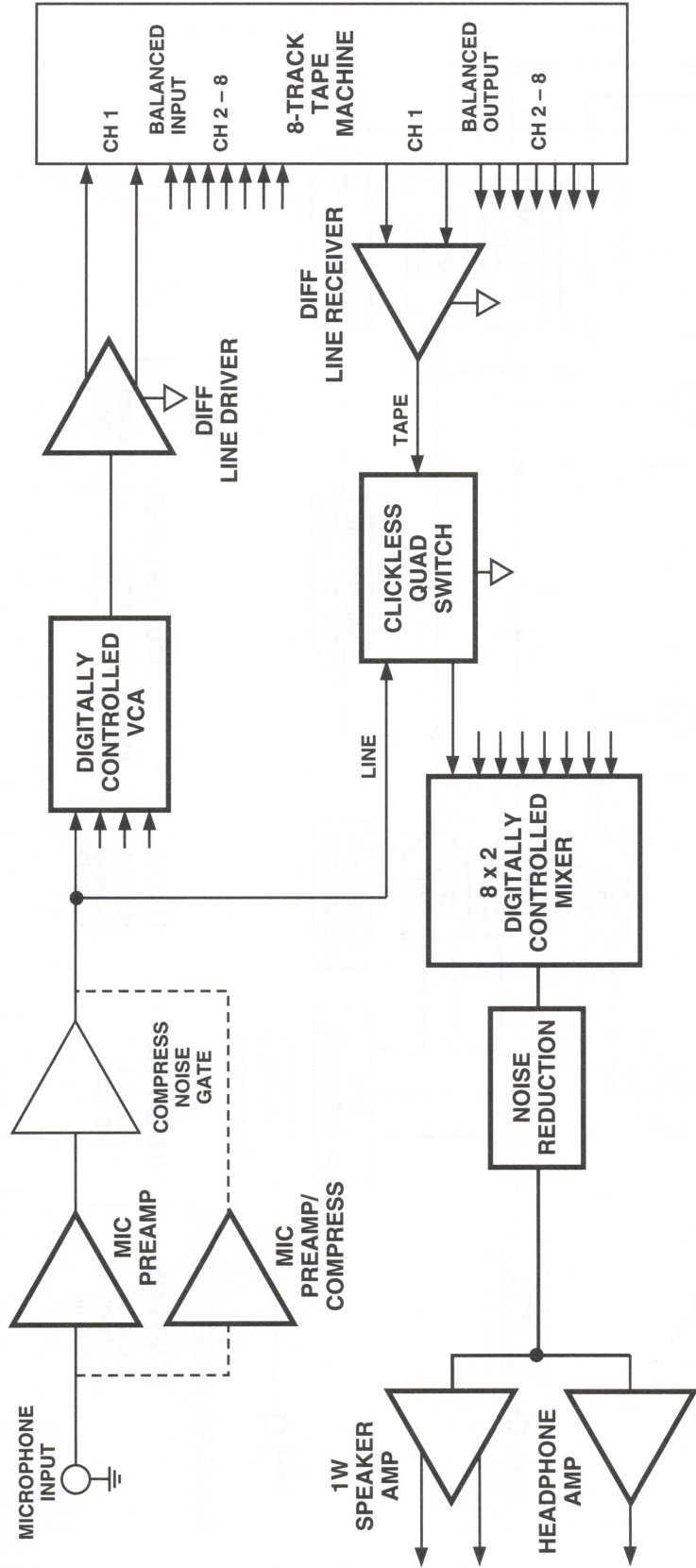


### SOME ADI SUGGESTIONS:

RECEIVER AD6620	DAC AD9764
--------------------	---------------



Complete Professional Studio

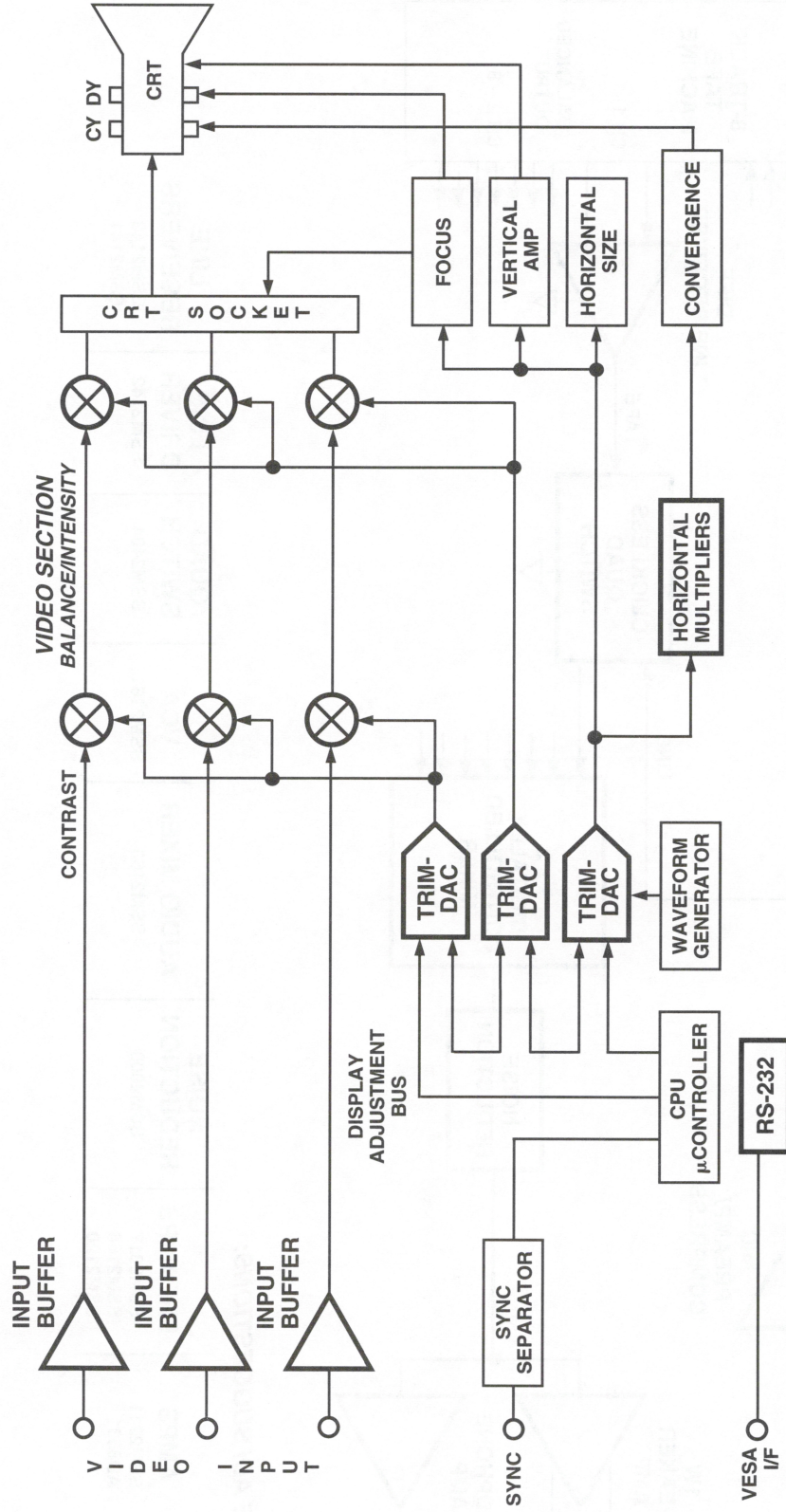


SOME ADI SUGGESTIONS:

AMPS	PREAMPS	NOISE REDUCTION	AUDIO MIXER	VCA	QUAD SWITCH	LINE DRIVER	LINE RECEIVERS
SSM2211 AD8531	SSM2017 SSM2166 SSM2120	SSM2000	SSM2163	SSM2161	SSM2404	SSM2142	SSM2143 SSM2141



## Computer Graphics

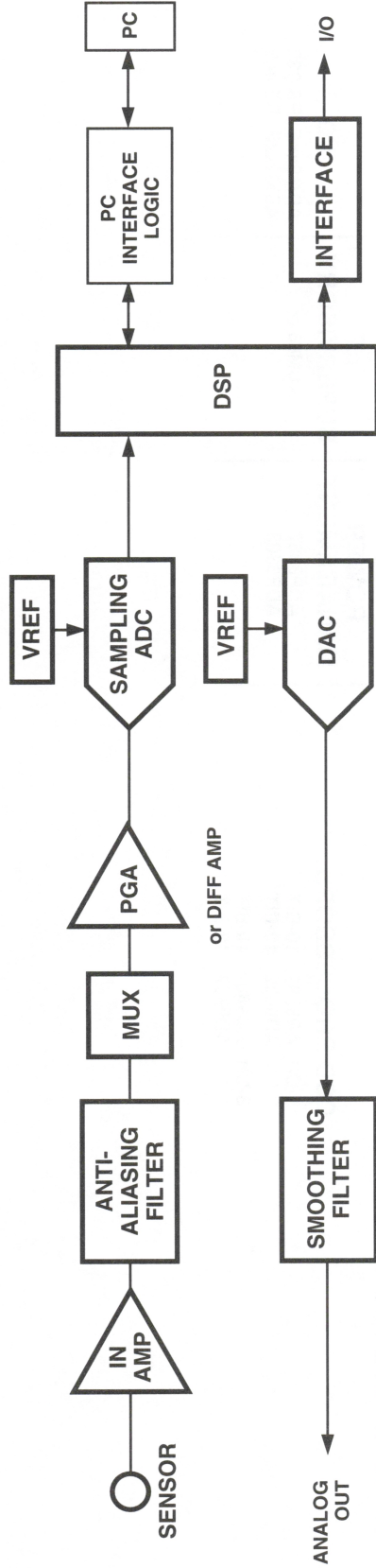


### SOME ADI SUGGESTIONS:

BUFFERS	INTERFACE	DACS	MULTIPLIERS
AD8001 AD8005 AD8009	ADM2xx ADM3xxx	DAC8800 DAC8840 DAC8842	AD834 AD835 AD633 MLT04 AD834 AD835



## Data Acquisition System, PC Board

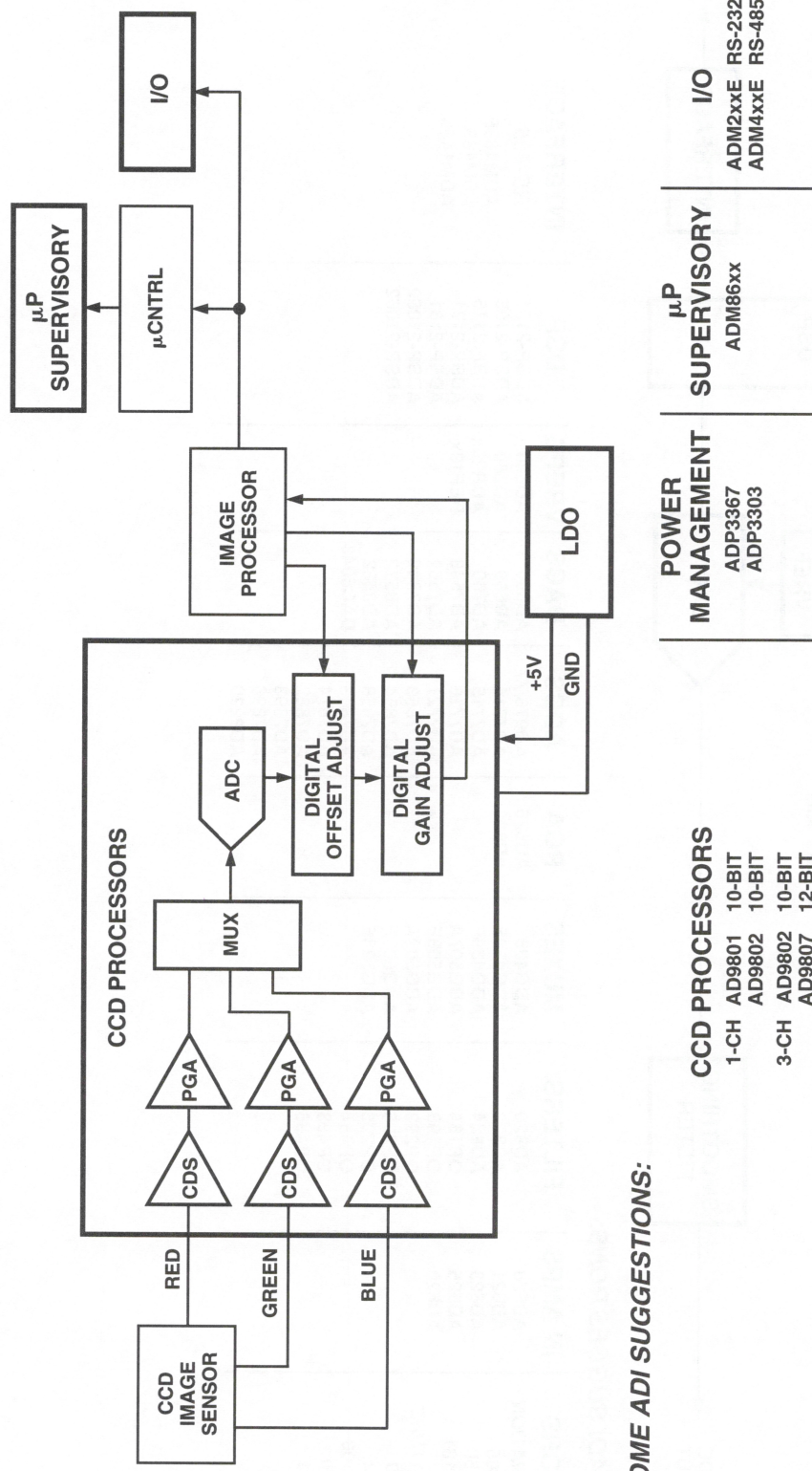


### SOME ADI SUGGESTIONS:

SENSORS	IN AMPS	FILTERS	MUXES	PGA	ADCS	DACS	VREFS	DSP	INTERFACE
ACCELERATION	AD620	AD820	ADG408	AD526	AD976/77	AD660	AD680	ADSP-2101	RS-485
ADXL05	AD621	AD822	ADG438F	AD626	AD7714	AD669	AD780	ADSP-2105	ADM483E
ADXL50	AD623	AD824	ADG439F		AD7715	AD760	ADR29x	ADSP-2115	ADM485
ADXL181	AD625	OP184	ADG507A		AD7716	AD7548	REF19x	ADSP-2171	ADM1485
TEMPERATURE	AD820	OP193	ADG508F		AD7721	AD7564		ADSP-2181	
AD590		OP293	ADG509A		AD7853	AD7849		ADSP-21060	
AD592		OP295	ADG509F		AD7854	AD8522		ADSP-21062	
AD22100		OP296	ADG528F		AD7858	AD8582			
ADR70		OP484			AD7859	DAC8043			
TMP01		OP493			AD7874				
		OP496			AD7882				
					AD7893				
					AD7896				
					AD9220				



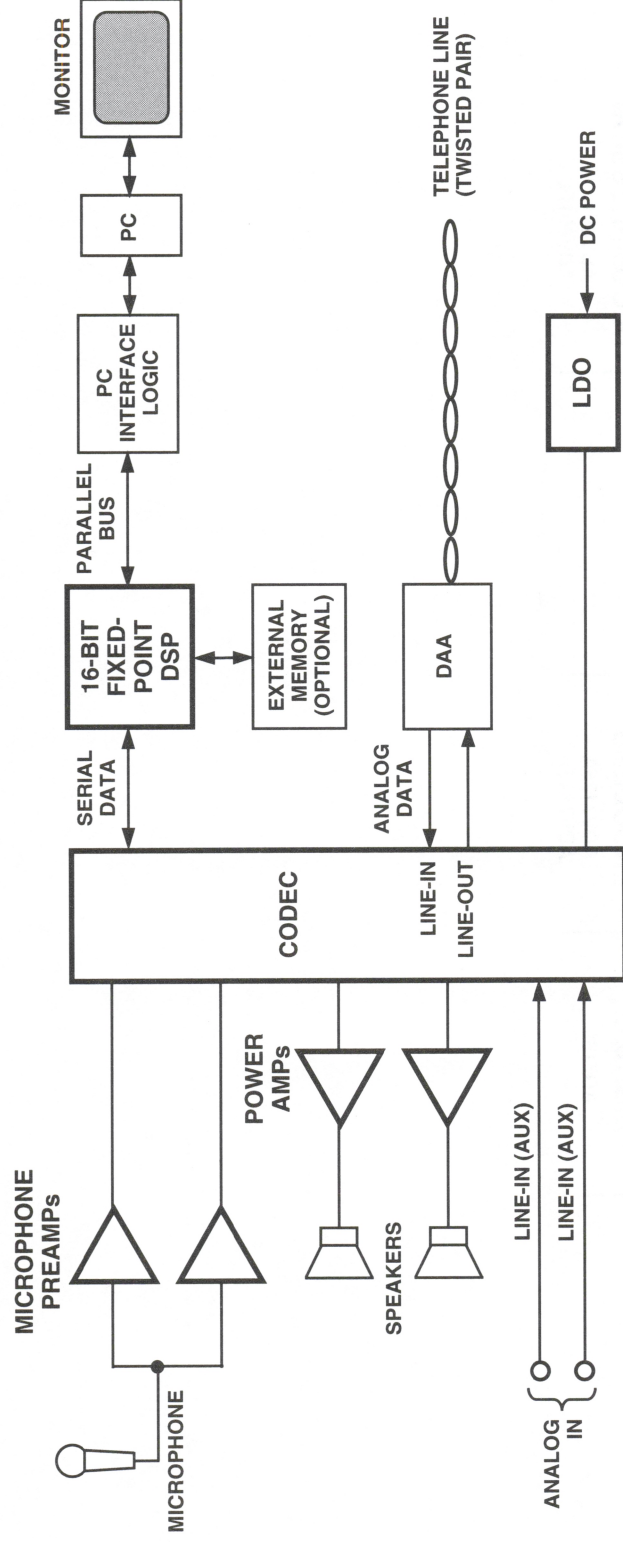
## Digital Camera



SOME ADI SUGGESTIONS:



## Fax Modem Sound Card

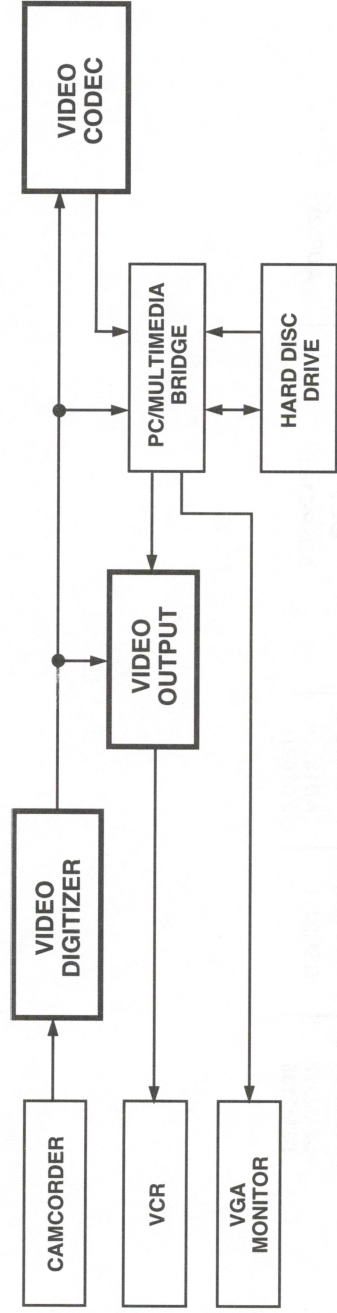


### SOME ADI SUGGESTIONS:

PREAMPS	PWR AMP	CODECS	FIXED-POINT DSP	LDO
SSM2017 SSM2135	SSM2211	AD1819A AD1821	ADSP-218x	ADP33xx



## Home Video Editing

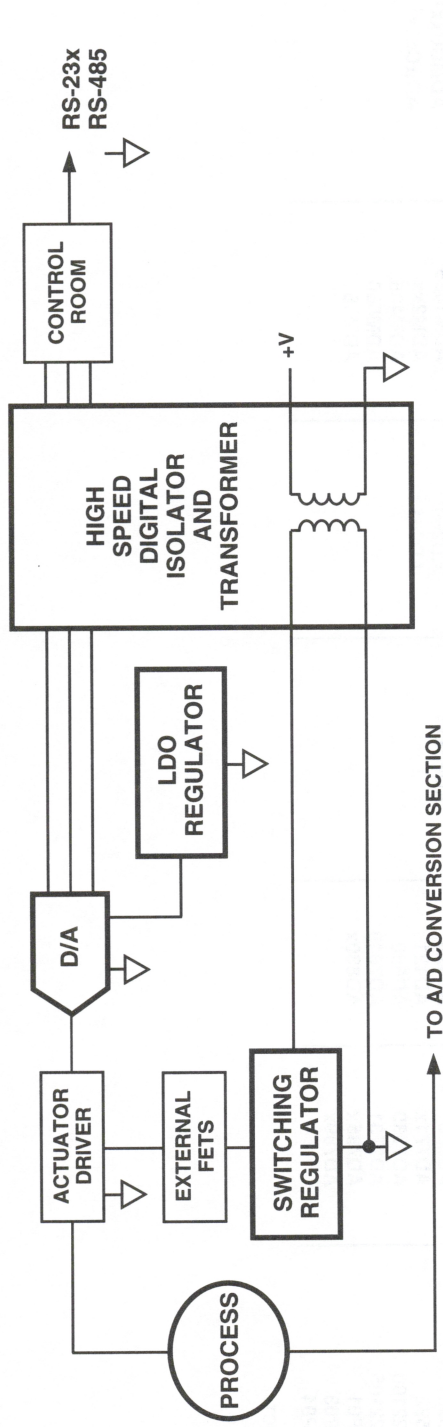


### SOME ADI SUGGESTIONS:

DIGITIZER	ENCODERS	COMPRESSION/ DECOMPRESSION
AD7185	ADV7175A ADV7176A	ADV601 ADV601LC



## Isolated Actuator Control

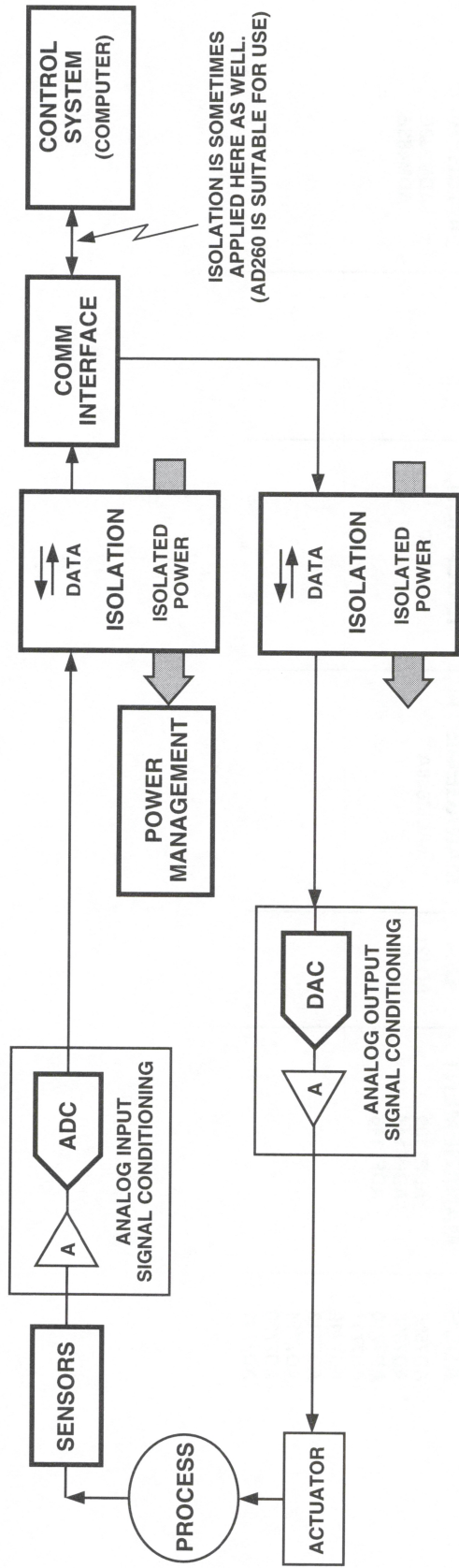


### SOME ADI SUGGESTIONS:

ADCS	POWER MANAGEMENT	D/A	POWER MANAGEMENT	ISOLATION	INTERFACE
AD7505	ADP1109	AD421	ADM660A	AD260	ADM232E
AD7506	ADP1147				ADM483E
AD7710	ADP1148				
AD7711					
AD7712					
AD7713					
AD7714					
AD7730					
AD7731					



## Isolated Process Control Loop



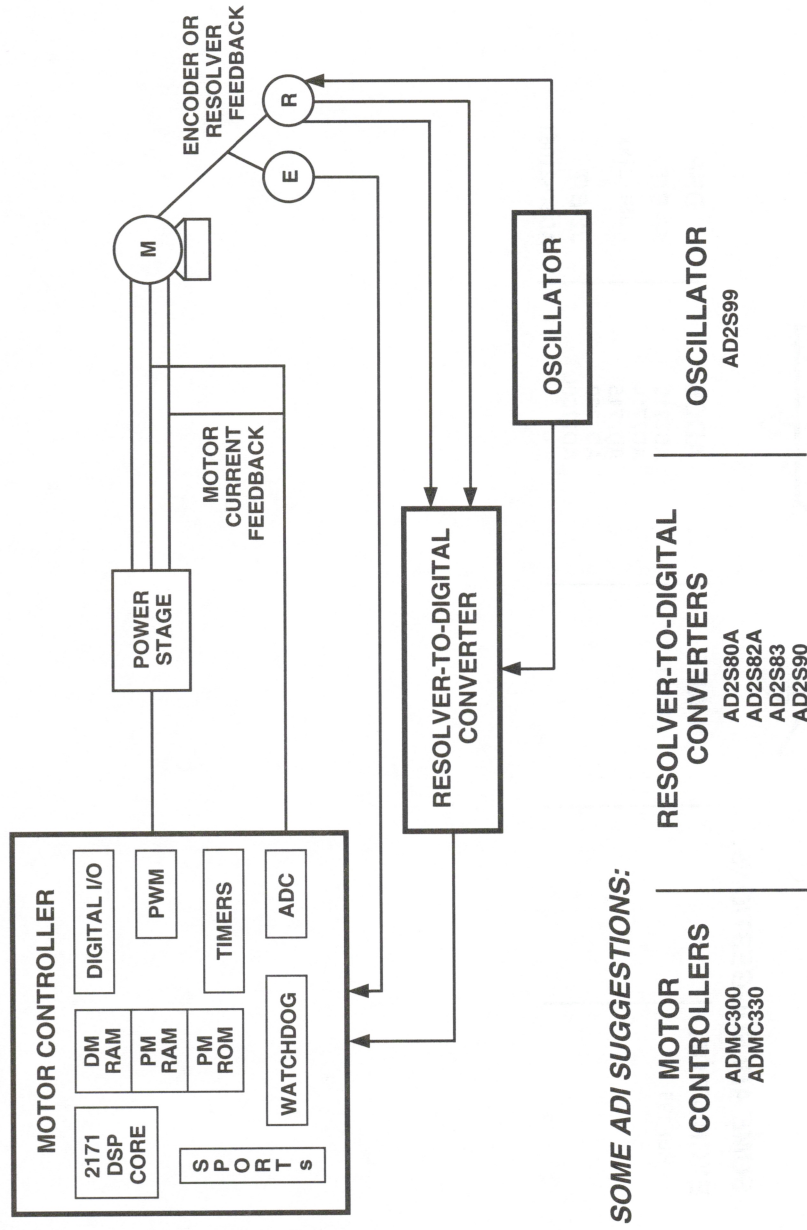
### SOME ADI SUGGESTIONS:

SENSORS	ADCS	DACS	POWER MGMT	ISOLATION	COMM INTERFACE	MICROPROCESSORS
AD590 AD592 AD22100 AD22105 TMP01 TMP03 TMP04	AD280 AD771x AD7730 AD7731 AD785x AD789x	AD420 AD421 AD660 AD7849 AD830x	ADP3xxx	AD260 <sup>1</sup> AD261	ADM1485 ADM2xx ADM485 ADM560 ADM561	ADMCUxx <sup>1</sup> ADμC81x <sup>1</sup>

<sup>1</sup>FUTURE PRODUCT

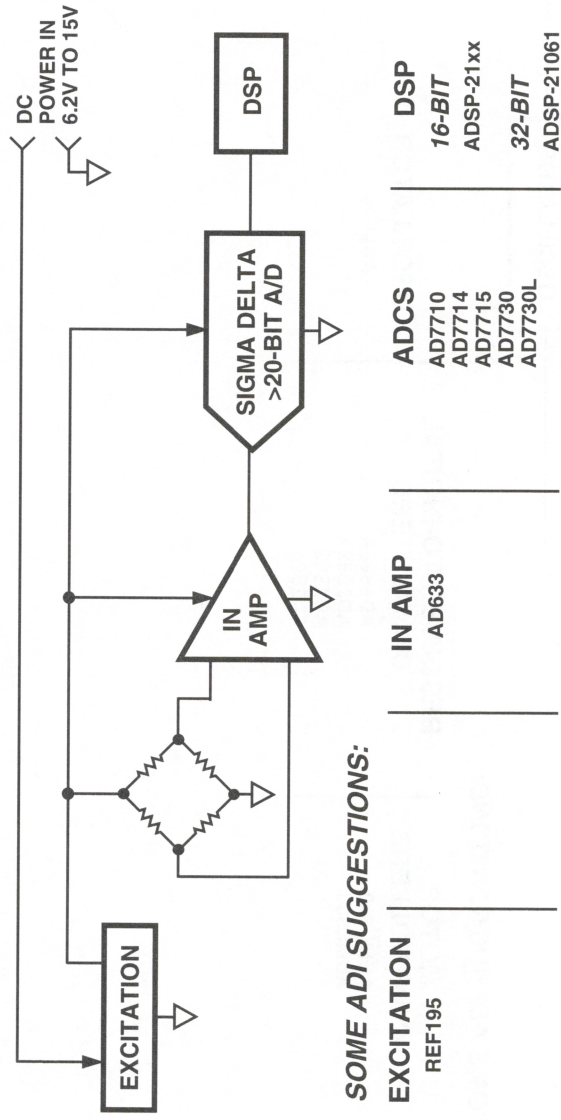


## Motor Controller



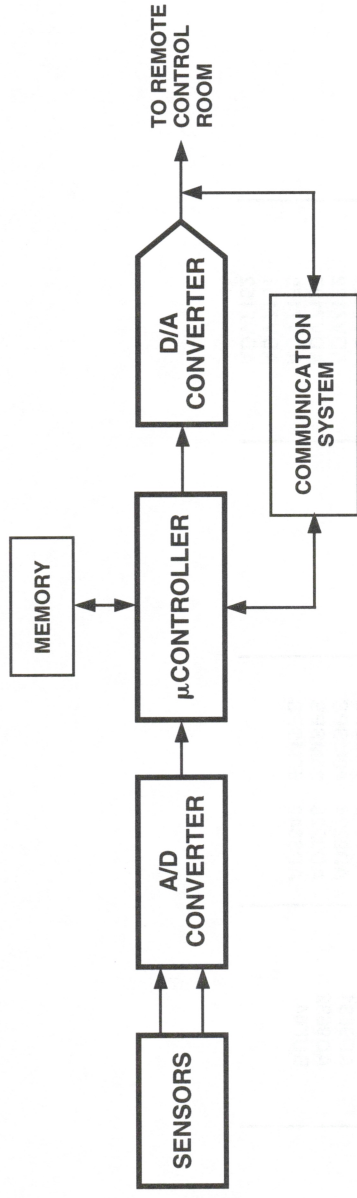


## Single Supply Weigh Scale





## Smart Industrial Transmitter



### SOME ADI SUGGESTIONS:

**TEMP SENSORS**  
AD590  
AD592  
AD22100  
AD22103  
TMP35  
TMP36  
TMP37

**ADCS**  
AD280  
AD7705  
AD7706  
AD7714  
AD7715

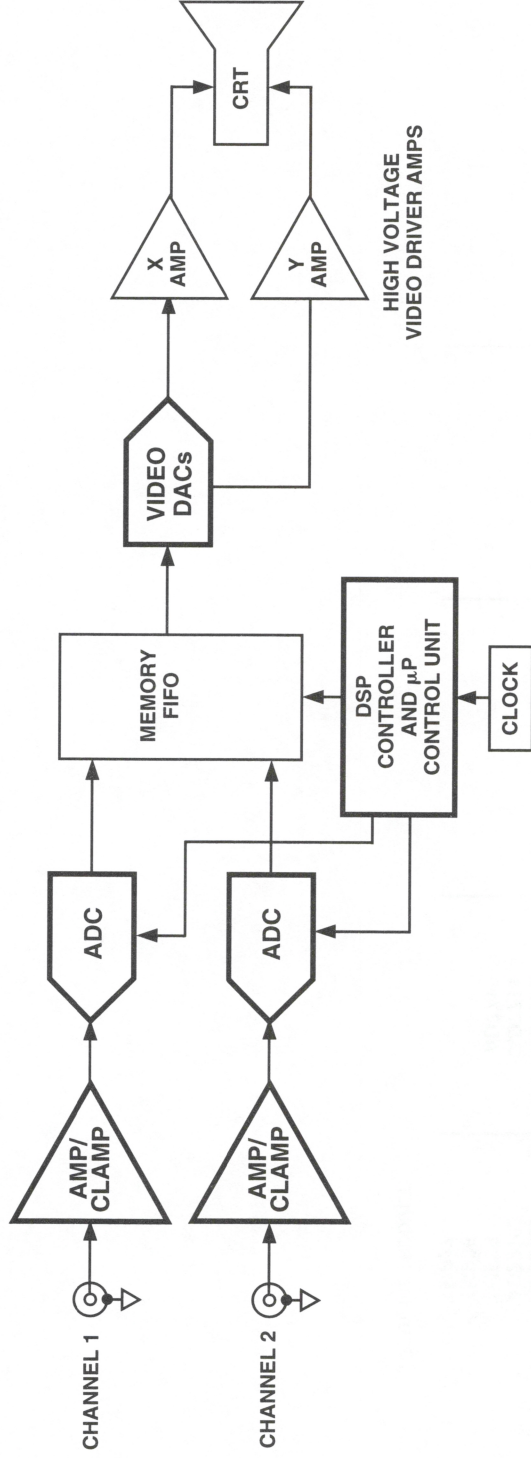
**μCONTROLLER**  
AD $\mu$ C812<sup>1</sup>

**DAC**  
AD421

<sup>1</sup> FUTURE PRODUCT



## Storage Oscilloscope

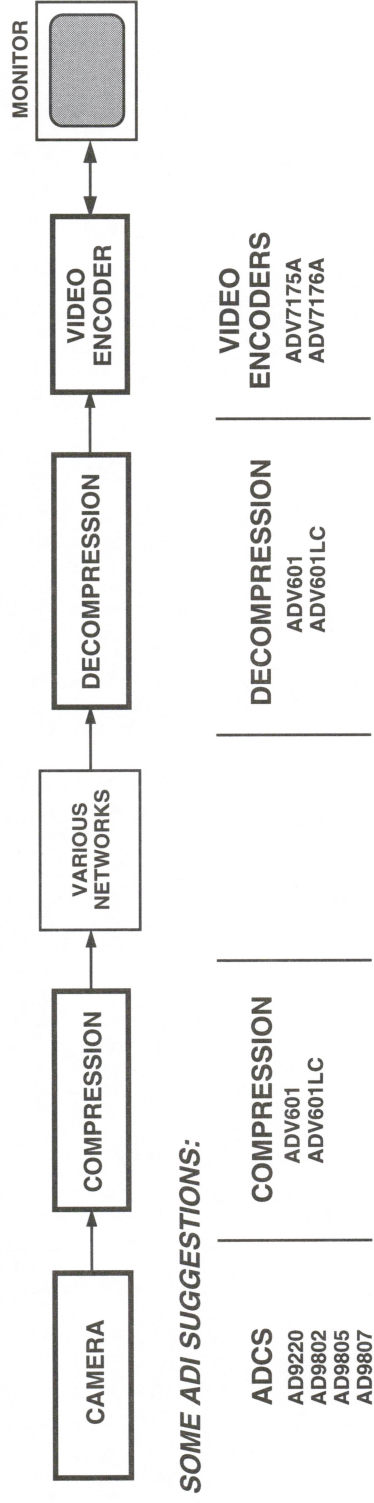


### SOME ADI SUGGESTIONS:

AMP/CLAMPS	10-BIT ADC	DSP	8-BIT DAC
AD8005	AD9070 100MSPS	ADSP-218x	ADV7127
AD8009			
AD8036	12-BIT ADCS		10-BIT DACS
AD8037	AD9220 10MSPS		ADV7121
AD9631	AD9224 40MSPS		ADV7122
AD9632	AD9225 25MSPS		ADV7127
BUF04	AD6640 65MSPS		ADV7150
			ADV7151
			ADV7152



## Surveillance System







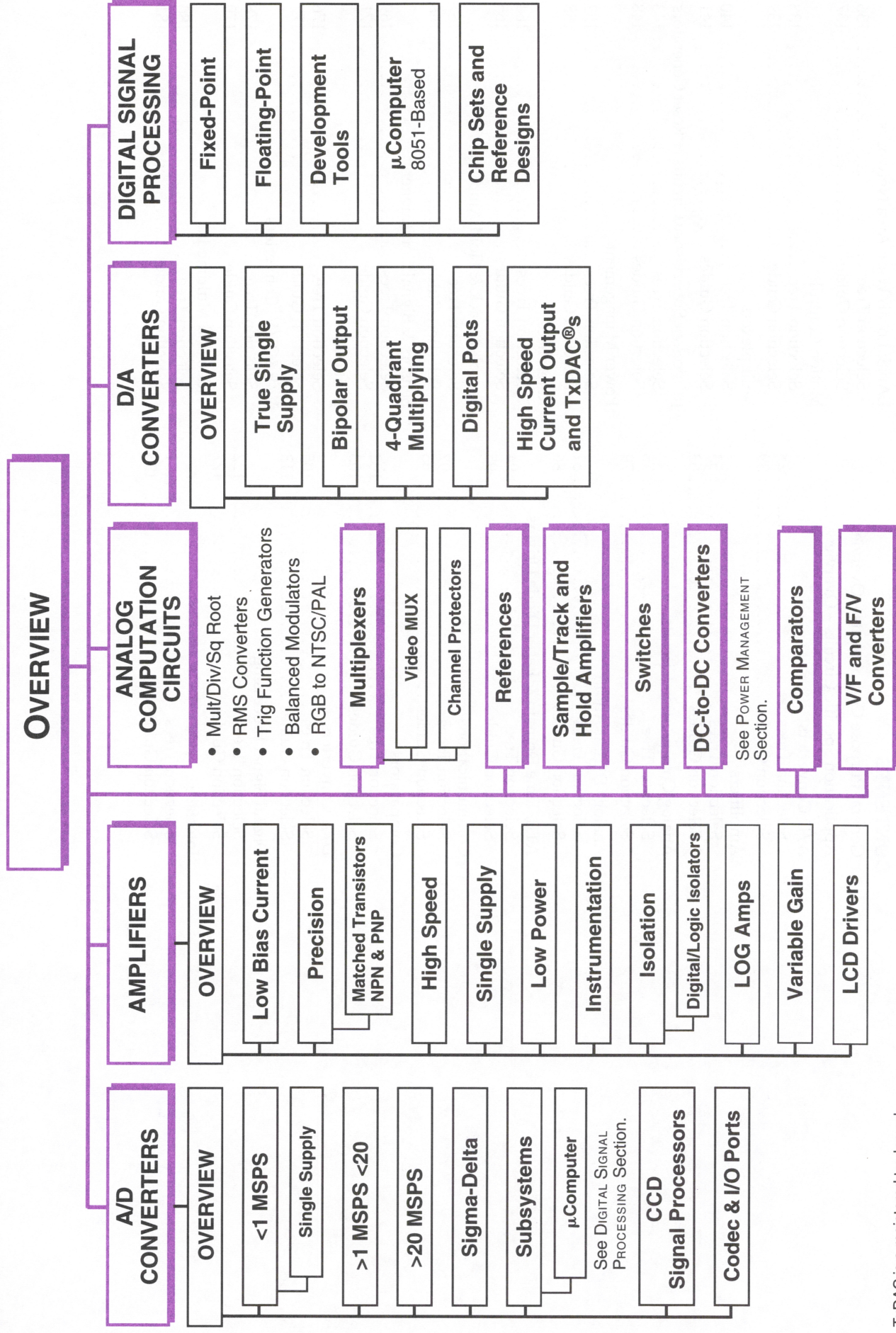


## CONTENTS

General Purpose Components – Overview . . . .	26	LANs: Local/Wide Area Networks	
Application Specific Circuits – Overview . . . .	27	Selection Tree . . . . .	136
A/D Converters		Selection Guide . . . . .	137
Selection Trees . . . . .	28	Motion Control	
Selection Guides . . . . .	39	Selection Tree . . . . .	138
Amplifiers		Selection Guide . . . . .	139
Selection Trees . . . . .	53	Multiplexers	
Selection Guides . . . . .	63	Selection Tree . . . . .	140
Analog Computation Circuits		Selection Guides . . . . .	141
Selection Tree . . . . .	78	µProcessor Supervisory Circuits & Reset Generators	
Selection Guides . . . . .	79	Selection Trees . . . . .	143
Analog/Digital Audio		Selection Guides . . . . .	148
Selection Trees . . . . .	81	Power Management	
Selection Guides . . . . .	86	Selection Trees . . . . .	152
ATE, Time Domain & Laser Diode Drivers		Selection Guides . . . . .	158
Selection Tree . . . . .	94	References	
Selection Guides . . . . .	95	Selection Trees . . . . .	164
Communications		Selection Guides . . . . .	165
Selection Trees . . . . .	97	Sample/Track & Hold Amplifiers	
Selection Guides . . . . .	99	Selection Tree . . . . .	167
Comparators		Selection Guides . . . . .	168
Selection Tree . . . . .	102	Sensors & Signal Conditioners	
Selection Guides . . . . .	103	Selection Trees . . . . .	169
D/A Converters		Selection Guide . . . . .	171
Selection Trees . . . . .	105	Switches	
Selection Guides . . . . .	113	Selection Tree . . . . .	176
Digital Signal Processing		Selection Guide . . . . .	177
Selection Trees . . . . .	122	V/F & F/V Converters	
Selection Guides . . . . .	127	Selection Tree . . . . .	178
Interface		Selection Guide . . . . .	179
Selection Trees . . . . .	131	Video and Multimedia	
Selection Guides . . . . .	133	Selection Tree . . . . .	180
		Selection Guides . . . . .	181

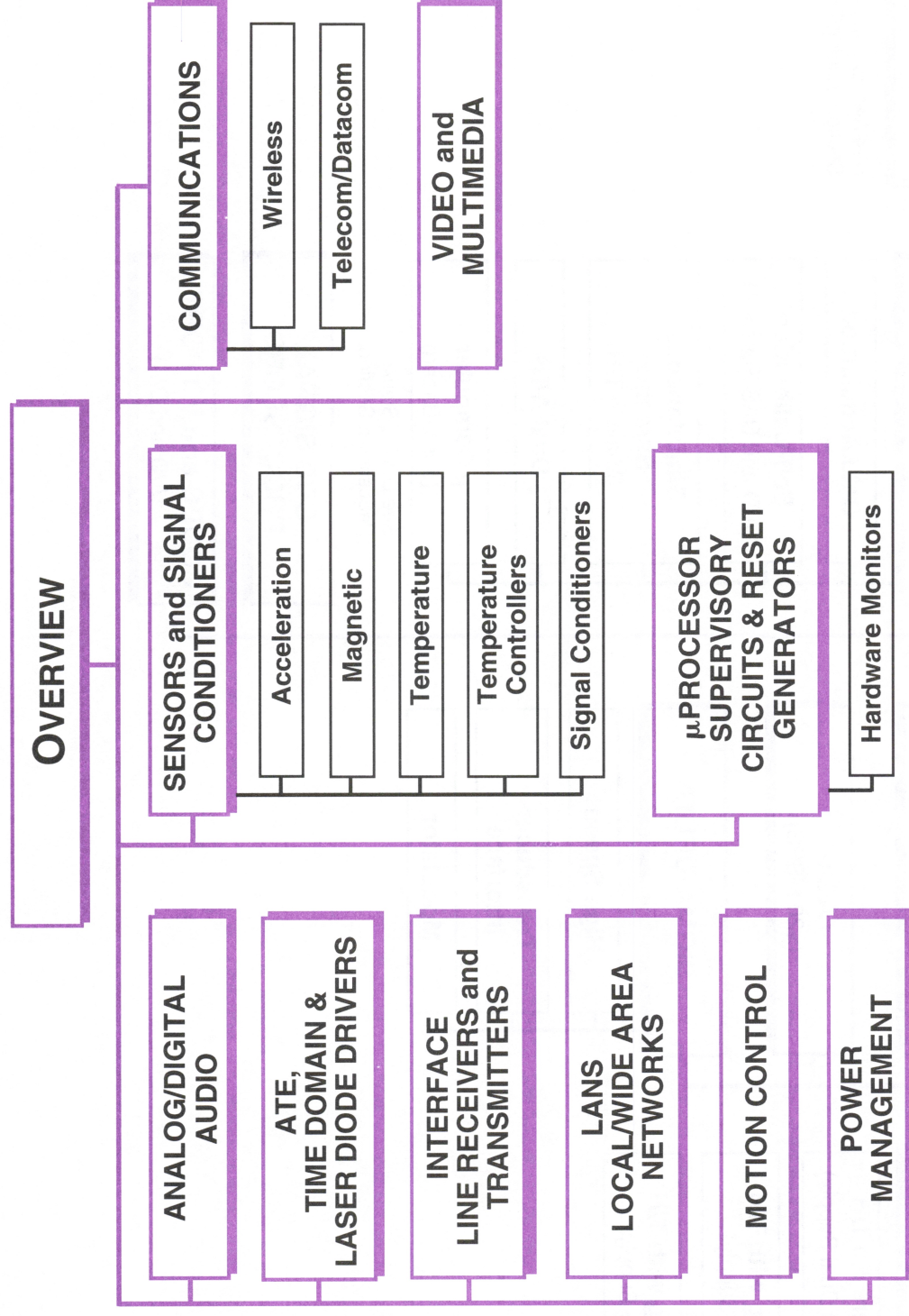


# GENERAL PURPOSE COMPONENTS

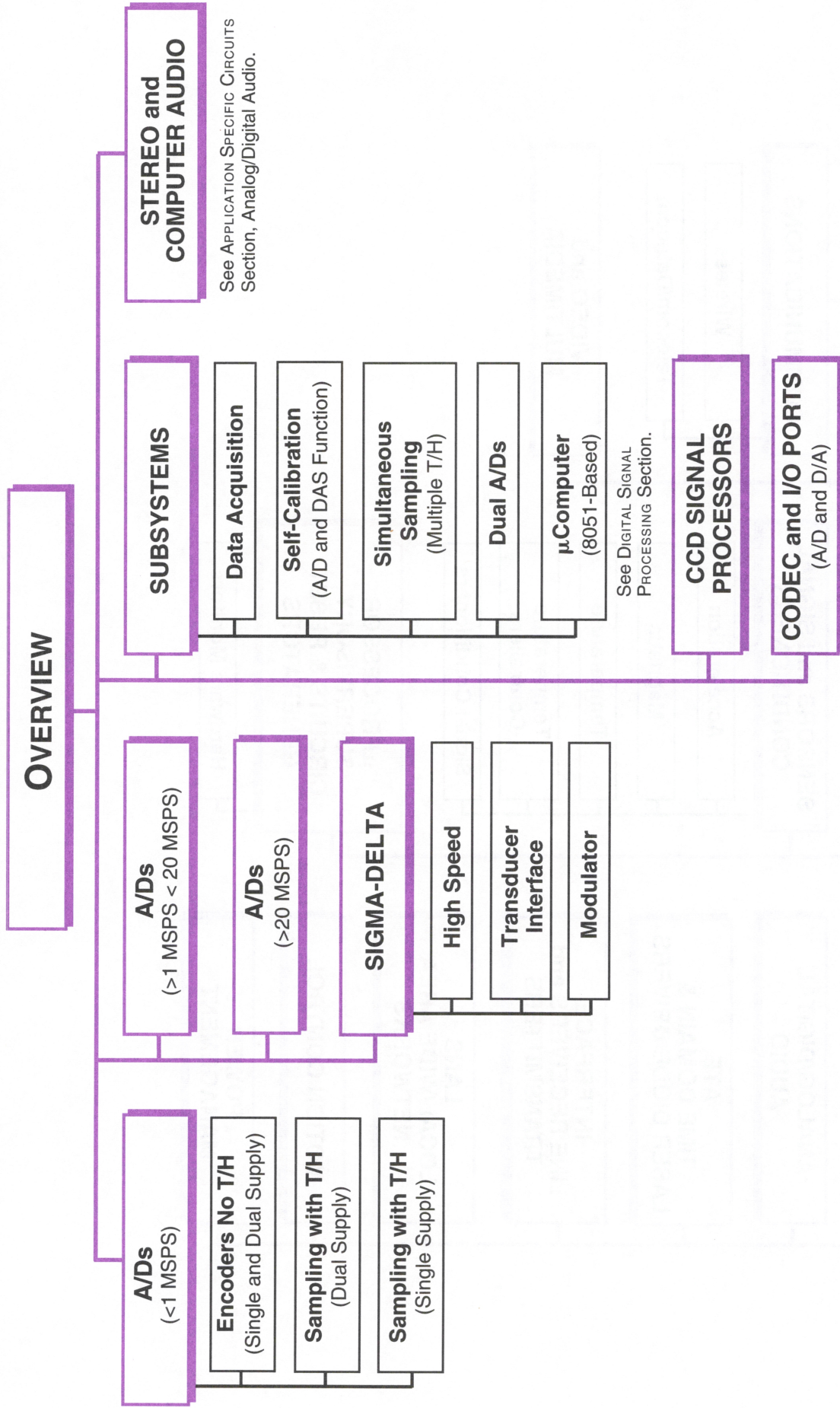


TxDAC is a registered trademark of Analog Devices, Inc.



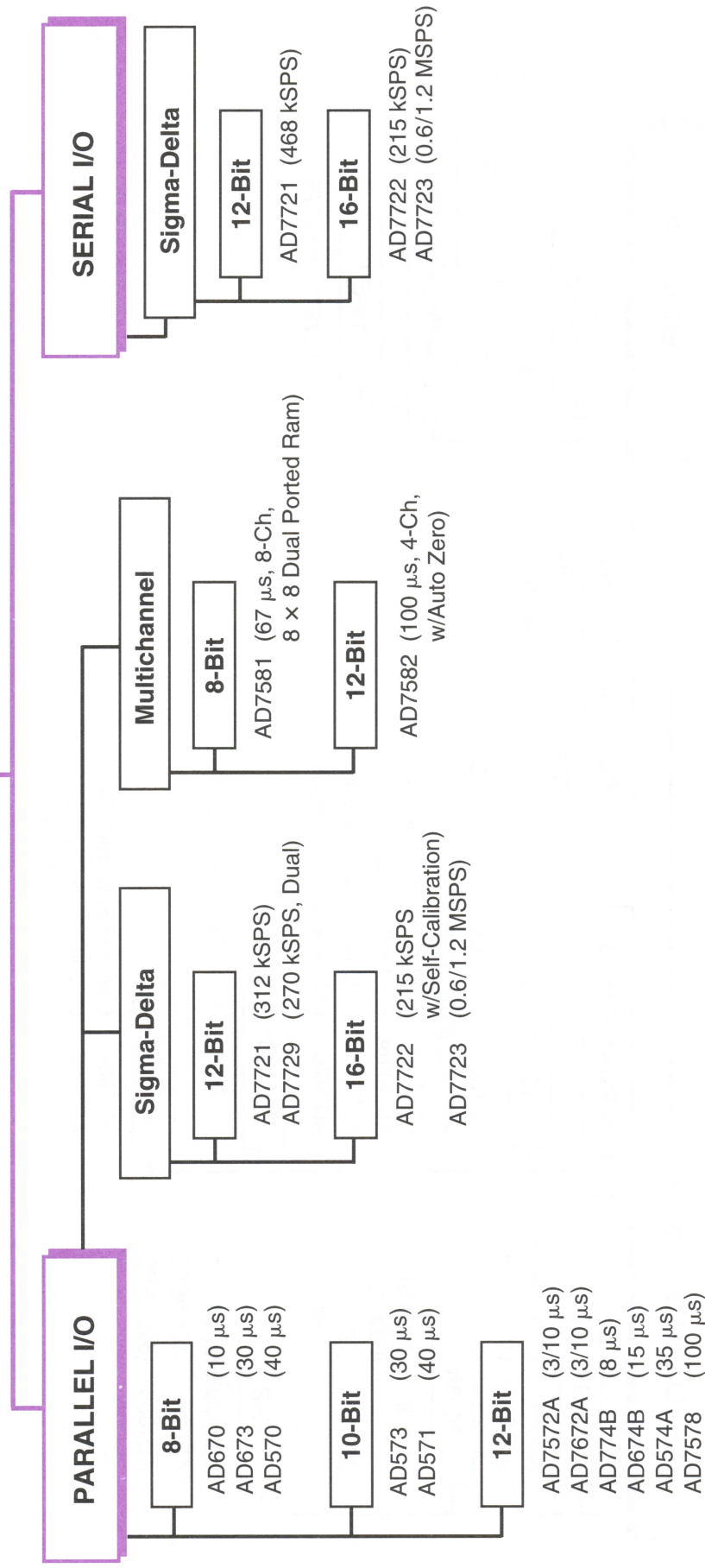






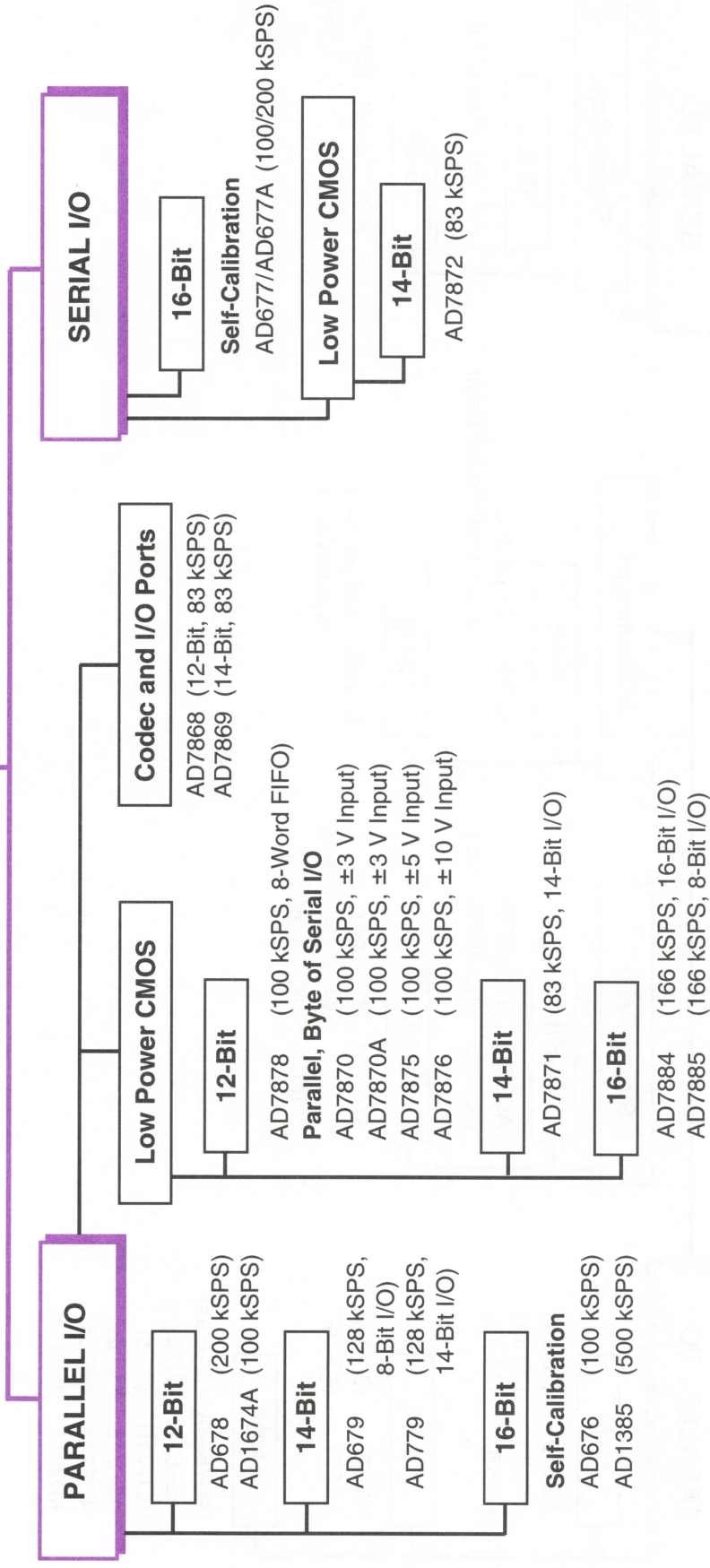


## <1 MSPS ENCODERS NO T/H





## <1 MSPS SAMPLING WITH T/H MULTIPLE SUPPLY





## <1 MSPS SAMPLING WITH T/H SINGLE SUPPLY

### PARALLEL I/O

#### Single Channel

##### 8-Bit

AD7819 (133 kSPS)  
AD7575 (100 kSPS)  
AD7822 (2 MSPS, +3 V)  
AD7821 (1 MSPS)

##### 10-Bit

AD7813 (350 kSPS, +2.7 V)  
AD7776 (350 kSPS)

##### 12-Bit

AD7892 (600 kSPS, Bipolar Input)  
AD7721 (312 kSPS)  
AD7854 (200 kSPS)  
AD7854L (100 kSPS, +3 V)  
AD7880 (67 kSPS)  
AD7883 (67 kSPS, +3 V)

##### 16-Bit

AD7723 (600 kSPS)  
AD7722 (200 kSPS)  
AD976 (100 kSPS)  
AD976A (200 kSPS)

#### Dual

##### Bipolar Input

AD7862 (12-Bit, 250 kSPS)  
AD7863 (14-Bit, 210 kSPS)

#### Multichannel

##### 8-Bit

AD7824 (4-Ch, 2.5  $\mu$ s/Ch)  
AD7828 (8-Ch, 2.5  $\mu$ s/Ch)  
AD8401 (4-Ch, 2.5  $\mu$ s/Ch)

##### 10-Bit

AD7579 (1-Ch, 50 kSPS, 8-Bit I/O)  
AD7580 (4-Ch, 50 kSPS, 10-Bit I/O)  
AD7777 (4-Ch, 2.5  $\mu$ s, 2 T/Hs)  
AD7778 (8-Ch, 2.5  $\mu$ s, 2 T/Hs)

##### 11-Bit

AD7861 (7-Ch, 3.2  $\mu$ s, 4 w/T/Hs)  
ADMC200 (4-Ch, 3.2  $\mu$ s, 4 w/T/Hs)  
ADMC201 (7-Ch, 3.2  $\mu$ s, 4 w/T/Hs)

##### 12-Bit

AD7864 (4-Ch, 500 kSPS)  
AD7891 (8-Ch, 500 kSPS, Bipolar Input)  
AD7859 (8-Ch, 200 kSPS)  
AD7859L (8-Ch, 100 kSPS)

##### 16-Bit

▶ AD974 (4-Ch, 200 kSPS)

▶ = New Product since 1997 Short Form Designers' Guide.



## <1 MSPS SAMPLING WITH T/H SINGLE SUPPLY

### SERIAL I/O

#### Single Channel

##### 8-Bit

AD7823 (135 kSPS)

##### 10-Bit

AD7810 (350 kSPS)

**With On-Chip Temp Sensor**

▶ **AD7418 (100 kSPS, I<sup>2</sup>C I/O)**

##### 12-Bit

▶ **AD7889 (600 kSPS, Bipolar Input)**

AD7892 (600 kSPS)

AD7721 (468 kSPS)

AD7895 (250 kSPS, 8-Pin)

▶ **AD7887 (200 kSPS, 700  $\mu$ A, 8-Pin)**

AD7853/L (200/100 kSPS)

AD7893 (177 kSPS, 8-Pin)

AD7896 (100 kSPS, 8-Pin)

##### 14-Bit

AD7851 (333 kSPS)

AD7894 (163 kSPS)

##### 16-Bit

AD7723 (470 kSPS)

AD7722 (200 kSPS)

AD977 (100 kSPS)

AD977A (200 kSPS)

▶ **AD974 (200 kSPS, 4-Ch)**

#### Multichannel

##### 10-Bit

AD7811 (4-Ch, 350 kSPS, +2.7 V to +5.5 V)

AD7812 (8-Ch, 350 kSPS, +2.7 V to +5.5 V)

**With On-Chip Temp Sensor**

▶ **AD7417 (4-Ch, 100 kSPS, I<sup>2</sup>C I/O)**

##### 12-Bit

AD7858 (8-Ch, 200 kSPS)

▶ **AD7888 (8-Ch, 200 kSPS, +2.7 V to +5.5 V)**

AD7858L (8-Ch, 100 kSPS, +2.7 V to +5.5 V)

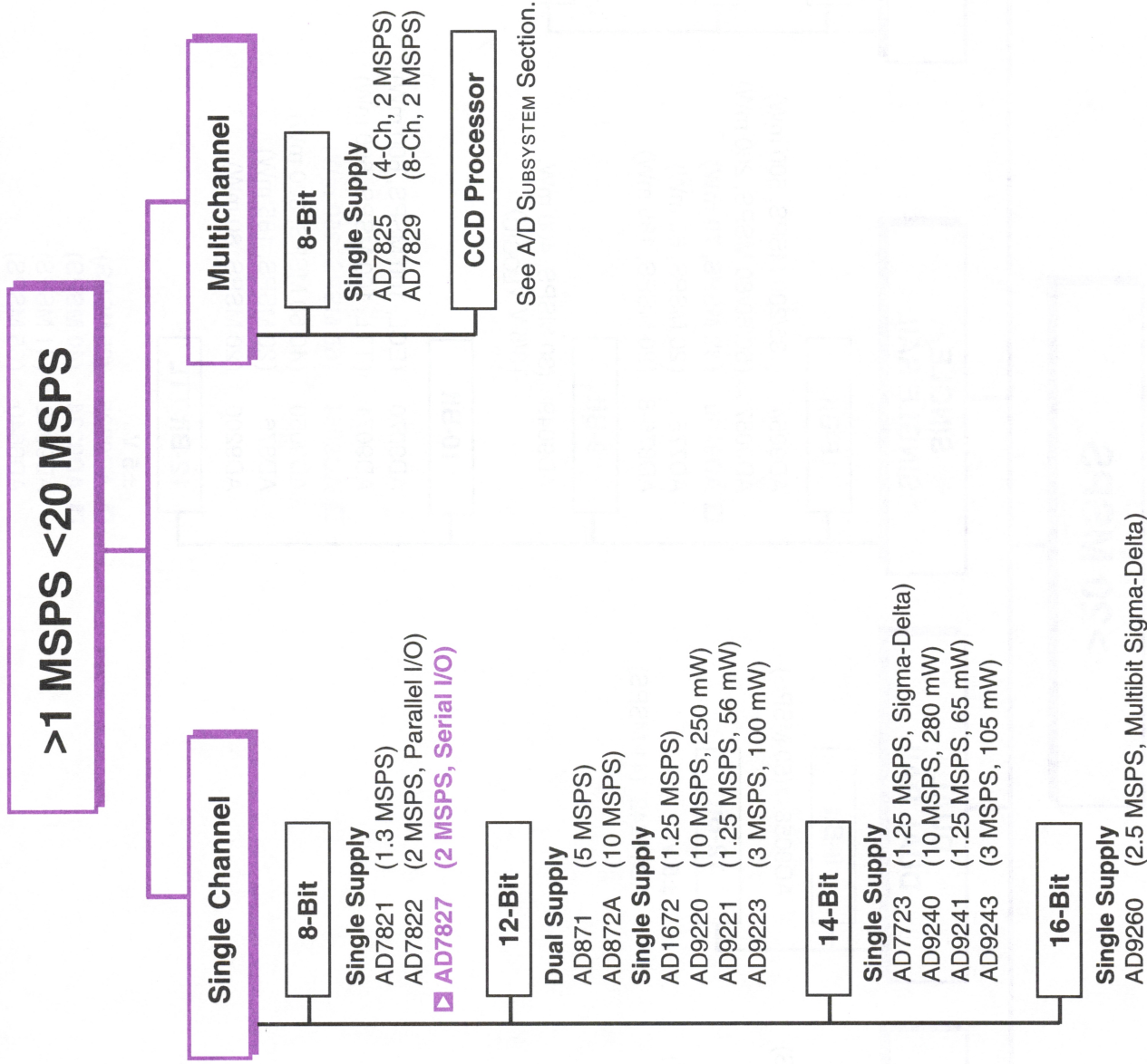
AD7890 (8-Ch, 83 kSPS)

AD7891 (8-Ch, 45 kSPS)

##### 14-Bit

AD7856 (8-Ch, 330 kSPS)

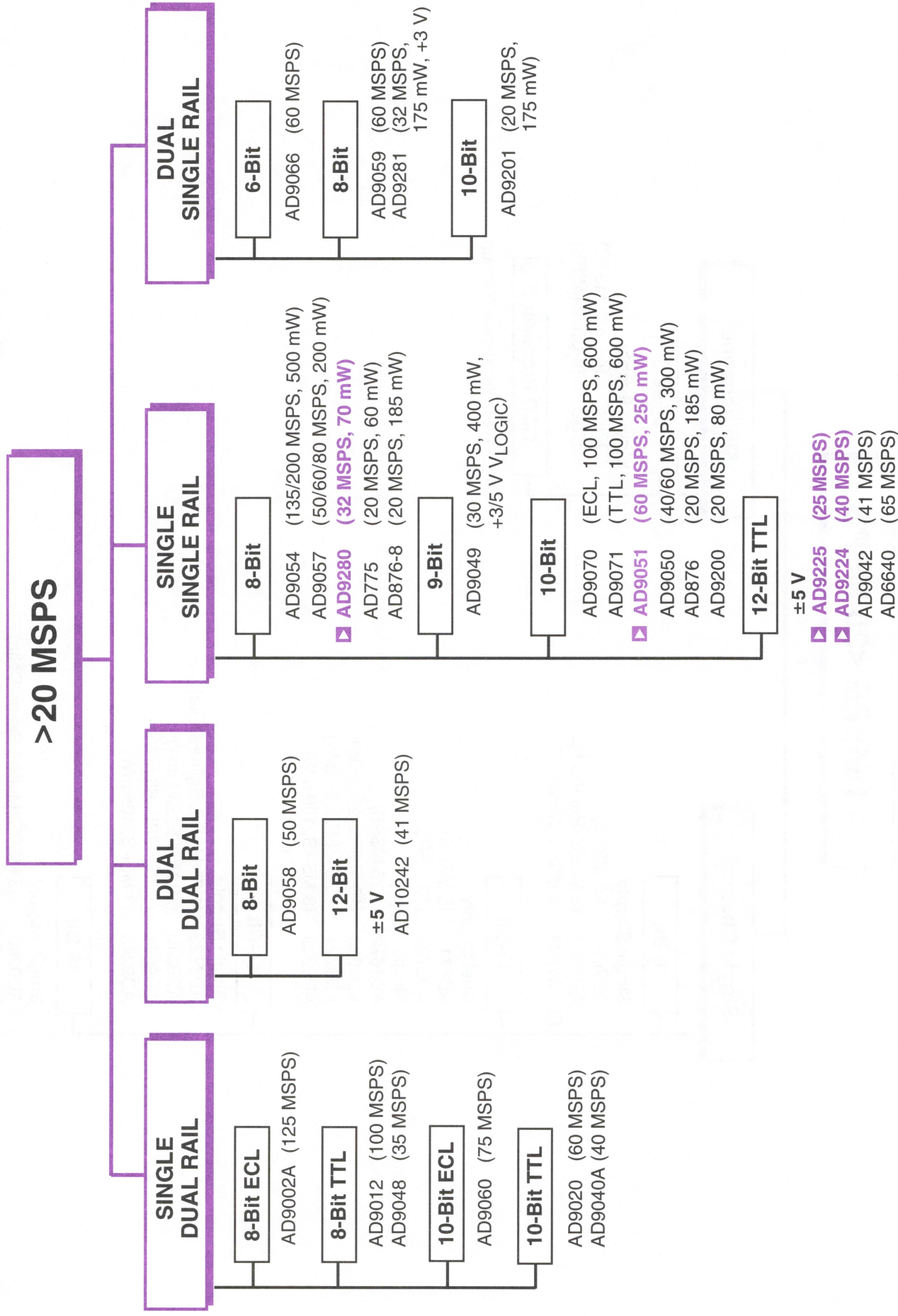




◻ = New Product since 1997 Short Form Designers' Guide.



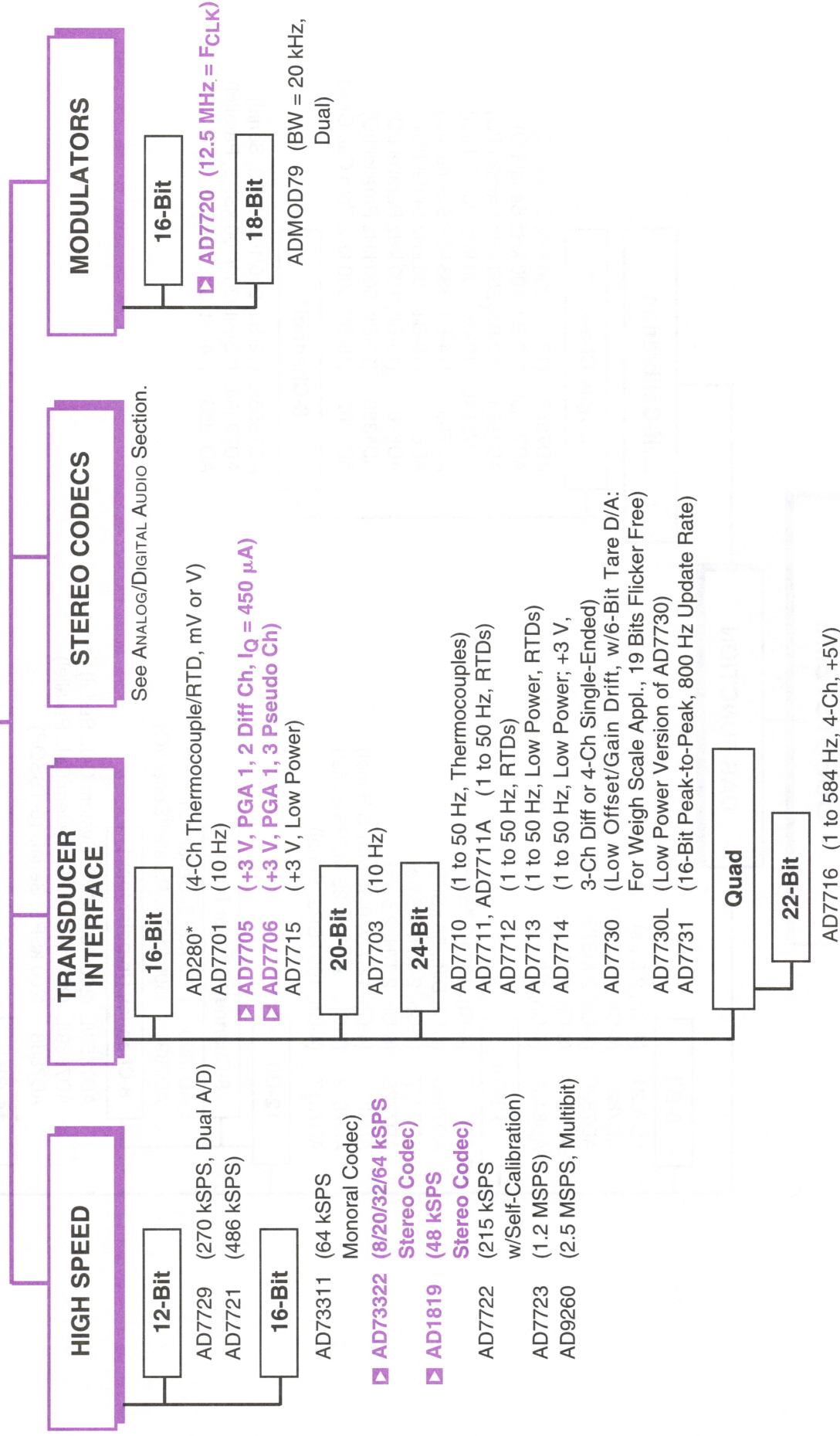
# A/D CONVERTERS



▶ = New Product since 1997 Short Form Designers' Guide.



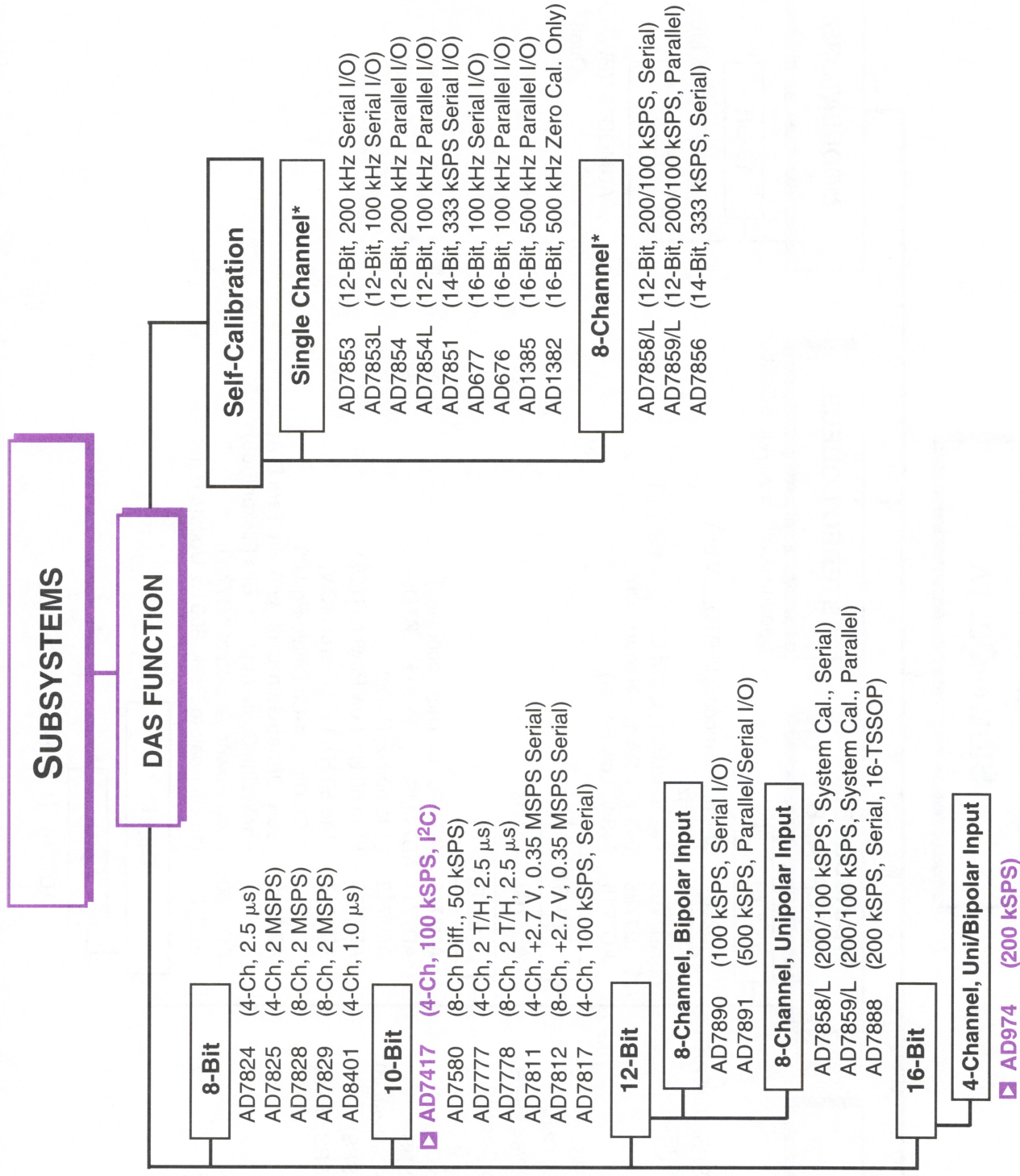
## SIGMA-DELTA



\*Charge Balance

▶ = New Product since 1997 Short Form Designers' Guide.

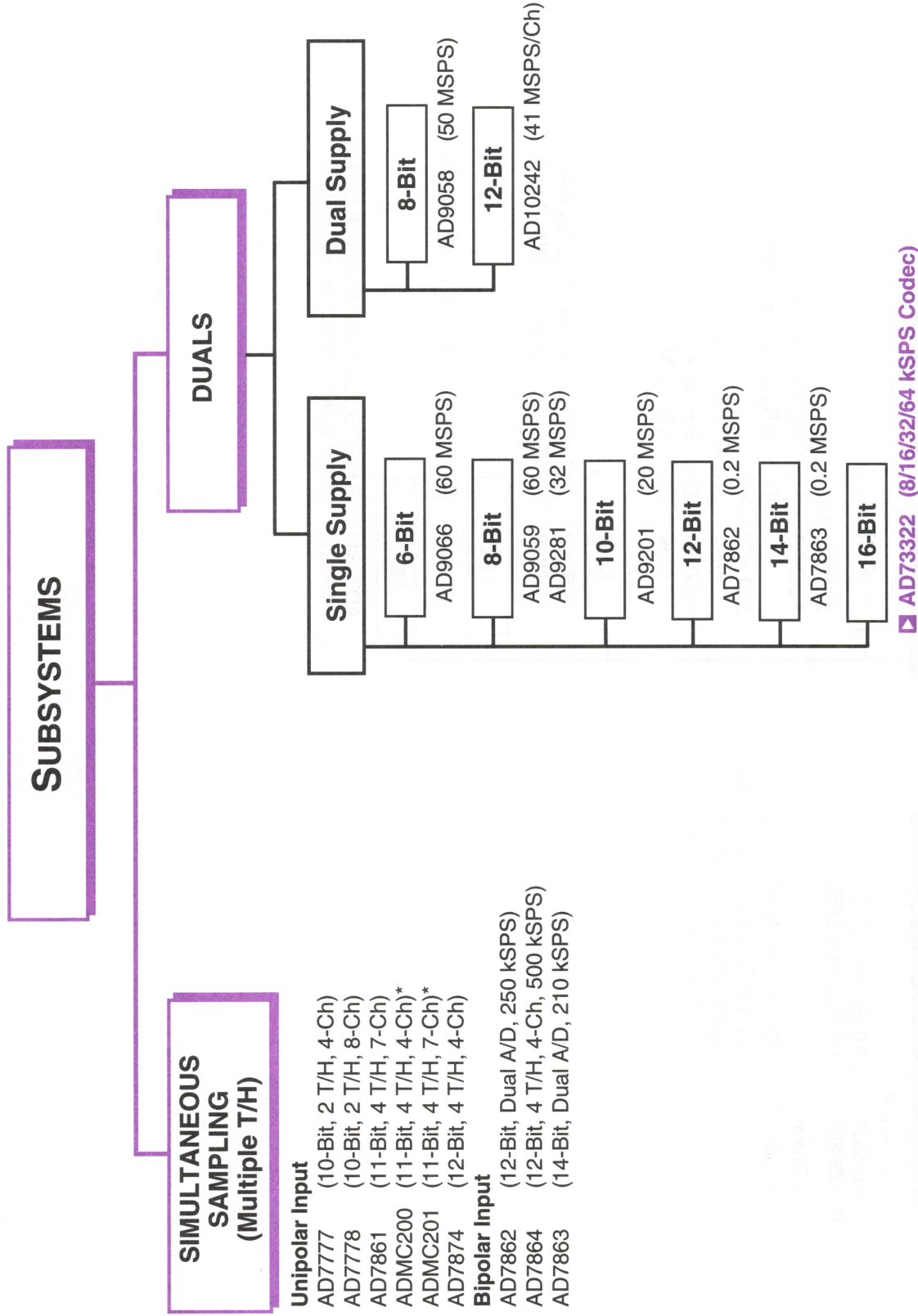




\*L Version +3.0 V Operation.

☐ = New Product since 1997 Short Form Designers' Guide.





\*L Version +3.0 V Operation.

▣ = New Product since 1997 Short Form Designers' Guide.



## CCD SIGNAL PROCESSORS

- 1-Channel**  
AD9801 (10-Bit, 18 MSPS)  
▶ **AD9802** (10-Bit, 18 MSPS)
- 3-Channel**  
AD9805/9807 (10/12-Bit, 6 MSPS  
w/Triple Correlated Double Sampler,  
Digital Offset and Gain Control,  
PGA Gain 1 to 4, 16 Steps)

## CODEC and I/O PORTS

- 8-Bit**  
**2 MSPS A/D**  
AD7339 (Dual, 8-Bit D/A, Parallel I/O)  
(Dual, 8-Bit D/A, Serial I/O)
- 500 kSPS A/D**  
AD7569 (Single, 8-Bit D/A)  
AD7669 (Dual, 8-Bit D/A)  
AD7769 (Dual, 8-Bit D/A)
- 12-Bit**  
AD7729 (270 kSPS, Dual A/D, 1 10-Bit D/A)  
AD7868 (83 kSPS, 1 × A/D, 1 × D/A, Serial)
- 14-Bit**  
AD7868 (83 kSPS, 1 × A/D, 1 × D/A, Serial)
- 16-Bit**  
AD73311 (64 kSPS, Low Cost, Monaural Codec)  
▶ **AD73322** (8/16/32/64 kSPS, Stereo Codec)



# A/D CONVERTERS

## <1 MSPS, Encoders No T/H

Model	# Bits	Power Supply Requirements		Input Voltage Range Volts	Convert Time $\mu$ s	Linearity @ +25°C $\pm$ Bits	Voltage Reference Int	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		+V <sub>cc</sub>	Volts									
Single Supply												
AD7821	8	+5	@ 5 mA	V <sub>REF</sub>	0.66	1	No	P8	20	\$ 9.95		1358
AD7581	8	+5	@ 5 mA	$\pm$ V <sub>REF</sub>	128	1/2 to 17/8	No	P8	28	\$13.90	8 $\times$ 8 Dual Ported RAM	1323
AD7580	10	+5	@ 10 mA	2.5	18	1/2 to 1	No	P10	24	\$ 9.90	4-Channel Input	1321
Multiple Supply												
AD570	8	+5, -12	@ 15 mA	10, $\pm$ 5	40	1/2	Yes	P8	18	\$35.45		1168
AD673	8	+5, -12	@ 15 mA	All	30	1/2	Yes	P10	20	\$10.01		1224
AD571	10	+5, -12	@ 15 mA	10, $\pm$ 5	40	1/2 to 1	Yes	P10	18	\$46.89		1169
AD573	10	+5, -12	@ 25 mA	10, $\pm$ 5	30	1/2 to 1	Yes	P10	20	\$25.65		1171
AD574A	12	+5, -12	@ 30 mA	All	35	1/2 to 1	Yes	P4/8/12	28	\$22.60	Industry Standard	1172
AD674B	12	+5, -12	@ 7 mA	All	15	1/2 to 1	Yes	P4/8/12	28	\$26.91	Industry Standard	1226
AD774B	12	+5, -12	@ 7 mA	All	8	1/2	Yes	P4/8/12	28	\$25.70	Industry Standard	1226
AD7572A	12	+5, -12	@ 12 mA	0 to +5	3 to 10	1/2 to 1	Yes	P8/12	24	\$16.00	Industry Standard	1317
AD7672A	12	+5, -12	@ 12 mA	All	3 to 10	1/2 to 1	No	P8/12	24	\$33.00		1333



## <1 MSPS, Sampling with T/H, Multiple Supply

Model	#	Power Supply Requirements		Input Voltage Range	Sample Rate kSPS	Linearity @ +25°C ±Bits	Voltage Reference-Volts		I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Bits	+V <sub>cc</sub> Volts				Int	Ext					
AD1674A	12	12	±12 @ 12 mA, +5 @ 8 mA	All	100	1/2 to 1	+10		P8/16	28	\$ 16.27	Industry Standard	1060
AD7870A	12	12	±5 @ 13 mA	±3	100	1/2 to 1	+3		P12	24	\$ 19.80	Mode 1 Oper, CS/RS Control Bus	1898
AD7870	12	12	±5 @ 13 mA	±3	100	1/2 to 1	+3		P12	24	\$ 19.80	Laser Trimmed Int. Clock	1375
AD7874	12	12	±5 @ 18 mA	±10	100	1/2 to 1	+3		P12	28	\$ 30.80	4-Channel Input w/T&H	1373
AD7875	12	12	±5 @ 13 mA	+5	100	1/2 to 1	+3		P12	24	\$ 24.26	Laser Trimmed Int. Clock	1375
AD7876	12	12	±5 @ 13 mA	±10	100	1/2 to 1	+3		P12	24	\$ 19.80	Laser Trimmed Int. Clock	1375
AD7878	12	12	±5 @ 5 mA	±3	100	NS	+3		P12	28	\$ 30.80	With 8 × 12 FIFO Memory	1376
AD678	12	12	±12 @ 25 mA, +5 @ 12 mA	+10, ±5	200	1/2 to 1	+5		P8/16	28	\$ 27.00	-80 dB THD @ 10 kHz	1229
AD7886	12	12	±5 @ 35 mA	+5/10	666	1.5 to 2		+5	P12	28	\$ 52.00	See AD9221 for New Designs	1381
AD7871	14	14	±5 @ 13 mA	±3	83	1	+3		P14	28	\$ 32.67		1372
AD7872	14	14	±5 @ 13 mA	±3	83	1	+3		S	16	\$ 30.80		1372
AD679	14	14	±12 @ 25 mA, +5 @ 12 mA	+10, ±5	128	2	+5		P8	28	\$ 29.70	-84 dB THD @ f <sub>IN</sub> = 10 kHz	1230
AD779	14	14	±12 @ 25 mA, +5 @ 12 mA	+10, ±5	100	2	+5		P16	28	\$ 32.67	-84 dB THD @ f <sub>IN</sub> = 10 kHz	1354
AD676	16	16	±12 @ 12 mA	±10	100	1 1/2		+5 to +10	P16	24	\$ 31.82	Self-Calibration	1227
AD677	16	16	±12 @ 12 mA	±10	100	1 1/2		+5 to +10	S	16	\$ 29.50	Self-Calibration	1228
AD7884	16	16	±5 @ 13 mA	±5/+3	166	4 1/2		+3	P16	40/44	\$ 45.00	-88 dB THD @ f <sub>IN</sub> = 1 kHz	1379
AD7885	16	16	±5 @ 13 mA	±5/+3	166	4 1/2		+3	P8	28/44	\$ 45.00	-88 dB THD @ f <sub>IN</sub> = 1 kHz	1379
AD1382	16	16	±15 @ 65 mA, +5 @ 160 mA	±5/10	500	4	+10		P16	DH48	\$595.00	Self-Calibration, Zero Only	1055
AD1385	16	16	±15 @ 75 mA, +5 @ 160 mA	±5/10	500	4	+10		P16	DH48	\$697.00	Self-Calibration, Zero and Linearity	1056



## <1 MSPS, Sampling with T/H, Single Supply\*

Power Supply Requirements		Input Voltage Range	Sample Rate kSPS	Linearity @ +25°C ±Bits	Voltage Reference-Volts		I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
# Bits	+V <sub>CC</sub> Volts	Volts			Int	Ext					
Unipolar Input											
AD7823	8	+2.7 @ 2.5 mA	135	1		+2.5	S	8	\$ 2.30	Auto Shutdown	2065
AD7819	8	+2.7 @ 3.5 mA	135	1/2		+1.2	P8	16	\$ 2.30	Auto Shutdown, Three-State	2064
AD7822	8	+3 @ 15 mA	2000	1	+2.5		P8	22/24	\$ 4.00	SNR = 472BQ F <sub>IN</sub> = 200 kHz	2106
AD7825	8	+3 @ 15 mA	2000	1	+2.5		P8	22/24	\$ 3.95	AD7822 with 4-Channel Mux	2106
AD7829	8	+3 @ 15 mA	2000	1	+2.5		P8	28	\$ 5.35	AD7822 with 8-Channel Mux	2106
AD7813	8/10	+2.7 @ 3.5 mA	50	1		+1.2	P8	16	\$ 3.00	Auto Shutdown, Three-State	2063
▶ AD7417	10	+2.7 @ 1.3 mA	100	1	+2.5		I <sup>2</sup> C	16	\$ 4.48	4-Channel Mux & Temp Sensor	2209
▶ AD7418	10	+2.7 @ 1.3 mA	100	1	+2.5		I <sup>2</sup> C	16	\$ 3.60	With 2/3°C Acc Temp Sensor	2209
AD7817	10	+2.7 @ 1.3 mA	100	1	+2.5		S	16	\$ 4.48	4-Channel Mux & Temp Sensor	2091
AD7818	10	+2.7 @ 1.3 mA	100	1	+2.5		S	8	\$ 3.60	With 2/3°C Acc Temp Sensor	2091
AD7810	10	+2.7 @ 3 mA	350	1		+1.2	S	8	\$ 2.80	Auto Shutdown	2061
AD7776	10	+5 @ 10 mA	380	1	+2		P12	24	\$ 8.30	I <sub>O</sub> = 1 mA w/CMOS Logic	1351
AD7811	10	+2.7 @ 2.5 mA	350	1	+2.5		S	16	\$ 3.60	With 4-Channel Mux	2062
AD7812	10	+2.7 @ 2.5 mA	350	1	+2.5		S	20	\$ 4.05	With 8-Channel Mux	2062
▶ AD7861	11	+5 @ 10 mA	200	2	+2.5		P12	44	\$11.76	With 4 T/H, 4 × 12 Register	1962
AD7883	12	+3 @ 2.5 mA	50	2	+2.5		P12	24	\$14.00	With Power-Down, Three-State	1378
AD7853L	12	+3/5 @ 1.3 mA	100	1/2 to 1	+2.5		S	24	\$ 7.55	With Power-Down, Self-Calibration	1814
AD7854L	12	+3/5 @ 1.6 mA	100	1/2 to 1	+2.5		P12	28	\$ 8.75	With Power-Down, Self-Calibration	2006
AD7858L	12	+3/5 @ 1.8 mA	100	1/2 to 1	+2.5		S	24	\$ 8.15	With 8-Channel Mux & Self-Calibration	1815
AD7859L	12	+3/5 @ 1.9 mA	100	1/2 to 1	+2.5		P12	44	\$13.65	With 8-Channel Mux & Self-Calibration	1874
AD7896	12	+3 @ 4.5 mA	117	1/2 to 1		V <sub>DD</sub>	S	8	\$ 4.45	With Power-Down I <sub>O</sub> = 10 μA	1816
AD7853	12	+3/5 @ 5.5 mA	200	1/2 to 1	+2.5		S	24	\$10.00	With Power-Down, Self-Calibration	1814
AD7854	12	+3/5 @ 5.5 mA	200	1/2 to 1	+2.5		P12	28	\$11.00	With Power-Down, Self-Calibration	2006
AD7858	12	+3/5 @ 6 mA	200	1/2 to 1	+2.5		S	24	\$11.35	With 8-Channel Mux & Self-Calibration	1815
AD7859	12	+3/5 @ 6 mA	200	1/2 to 1	+2.5		P12	44	\$13.85	With 8-Channel Mux & Self-Calibration	1874
▶ AD7887	12	+2.0 @ 0.7 mA	200	2	+1.2		SPI	8	\$ TBD	With Shutdown; QSPI I/O	2201
AD7888	12	+2.7 @ 0.7 mA	200	1 to 2	+2.5		S	16	\$ 4.50	With 8-Channel Mux, 16 TSSOP	1985
AD7721	12	+5 @ 80 mA	312	1		+2.5	P16	28	\$11.75	Sigma-Delta/12 Bit Mode, 10 MHz CLK	1829

\*Covers only A/Ds < 1 MSPS. See >1 MSPS for more options.

■ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## <1 MSPS, Sampling with T/H, Single Supply\*

		Power Supply Requirements		Input Voltage Range	Sample Rate kSPS	Linearity @ +25°C ±Bits	Voltage Reference—Volts		I/O	# Pins	Lowest Grade Price	Comments	Fax-code
#	+V <sub>CC</sub> Volts	Volts	Bits	Volts			Int	Ext			100s		
Unipolar Input													
AD7851	14	+3 @ 10 mA		V <sub>REF</sub> ±1.25	250	1 to 2	+4.096		S	24	\$14.00	Self- & System-Calibration	1873
AD7856	14	+5 @ 17 mA		V <sub>REF</sub> ±1.25	285	1 to 2	+3.97		S	24	\$15.25	Self-Calibration	2085
AD7721	16	+5 @ 80 mA		V <sub>REF</sub> ±1.25	468	1		+2.5	S	28	\$11.75	Sigma-Delta/16-Bit Mode, 15 MHz CLK	1829
AD7722	16	+5 @ 70 mA		V <sub>REF</sub> ±1.25	200	4	+2.5		P16/S	44	\$23.52	Self-Calibration, Sigma-Delta	1942
Bipolar Input													
AD7864	12	+5 @ 10 mA		±10, ±2.5	147	1	+2.5		P12	28	\$16.75	S/Hardware Ch Select	2087
AD7880	12	+5 @ 10 mA		0 to V <sub>DD</sub>	66	1		V <sub>DD</sub>	P12	24	\$17.60	With Power-Down	1377
AD7890	12	+5 @ 10 mA		±10/+5/±2.5	100	1		+2.5	S	24	\$12.00	With 8-Channel Mux	1382
AD7893	12	+5 @ 10 mA		±10/+5/±2.5	117	1/2 to 1		V <sub>DD</sub>	S	8	\$12.95	With Power-Down, 2 Wire I/O	1385
AD7895	12	+5 @ 4 mA		±10/±2.5/+2.5	200	1		+2.5	S	8	\$ 7.50	With Auto Power-Down	1985
AD7891	12	+5 @ 10 mA		All UNI/BP	500	1		+2.5	S/P12	44	\$17.50	With 8-Channel Mux	1383
AD7892	12	+5 @ 10 mA		±10/+5/±2.5	600	1/2 to 1	+2.5		P12	24	\$15.00	DASH-1, 2 Versions 500 kSPS	1384
AD7889	12	+5 @ 18 mA		±2.5/5/10, 0 to +2.5	600	NS to 1		+2.5	S	16	\$14.50	Self-Clocking or External	2202
AD7894	14	+5 @ 5 mA		±2.5/5/10, 0 to +2.5	163	1		+2.5	S	8	\$10.45	With Auto Power-Down	2157
AD974	16	+5 @ 11 mA		All UNI/BP	200	2 to 3	+2.5		S	28	\$28.50	4-Channel Mux Input	2415
AD977	16	+5 @ 10 mA		All UNI/BP	200	1 1/2 to 3	+2.5		S	20	\$23.50	Self-Calibration	1958
AD976	16	+5 @ 10 mA		±10	200	1 1/2 to 3	+2.5		P8/16	28	\$30.59	Self-Calibration	1953
AD7723	16	+5 @ TBD mA		± 4/5 × V <sub>REF</sub>	600	NS	+2.5		P16/S	44	\$47.10	Sigma-Delta	2103
Duals													
AD7862	12	+5 @ 12 mA		All	250	1 to 2	+2.5		P12	28	\$12.95	With Shutdown	2081
AD7863	14	+5 @ 16 mA		All	250	1 to 2	+2.5		P14	44	\$17.60	With Shutdown	2086

\*Covers only A/Ds < 1 MSPS. See >1 MSPS for more options.

□ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## >1 MSPS <20 MSPS, Single Channel, AC Specs Only

Model	# Bits	Sample Rate MSPS	Input BW MHz	SNR No. Harmonics -dB	SFDR -dB	SINAD S(N+D) dB	Test Conditions F <sub>IN</sub> MHz F <sub>SAMPLE</sub> MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>Single Supply</b>											
AD7821	8	1.3	NS	45 to 49	-50	NS	0.1 0.5	20	\$ 14.30	Parallel I/O	1358
AD7822	8	2	10	NS	55	48	0.03 2	20	\$ 3.95	Parallel I/O	2106
■ AD7827	8	1	NS	NS	NS	47	0.03 1	8	\$ 3.45	DSP or $\mu$ C I/O	2238
AD1671	12	1.25	12	70	67	68	0.1 1.25	28	\$ 57.75	AD9221 for New Designs	1059
AD9221	12	1.25	25	71	86	70	0.5 1.25	28	\$ 10.90	Flexible Input, 50 mW	1936
AD9223	12	3	40	71	86	70	1.5 3	28	\$ 17.85	Flexible Input, 100 mW	1936
AD1672	12	3	20	66	65	63	0.5 3	28	\$ 35.00	See AD9223 for New Designs	1880
AD9220	12	10	60	71	88	70	1 10	28	\$ 17.85	Flexible Input, 280 mW	1936
AD7723	14	1.2	0.6	84	90	80	0.6 1.2	44	\$ 47.10	Sigma-Delta, F <sub>CLK</sub> 33 MHz	2103
AD9241	14	1.25	25	79	84	79	0.5 1.25	44	\$ 21.50	Low Power, 65 mW	2137
AD9243	14	3	40	79	84	77	1.5 3	44	\$ 62.50	-72 dB THD @ 1.5 MHz	2036
AD9240	14	10	70	78.5	90	78.5	1.0 10	44	\$ 74.95	Fastest Mono, 14-Bit A/D	2136
AD9260	16	2.5	1	89.5	100	89	0.1 2.5	44	\$ 63.71	Multibit Sigma-Delta	2155

## Dual Supply

AD871	12	5	15	72	70	66	1 5	28	\$110.00	Mil 883B Version	1430
AD872A	12	10	70	70	72	65	4.99 10	28	\$181.50	Mil 883B Version	1891

## >1 MSPS <20 MSPS, Multichannel, AC Specs Only

Model	# Bits	Sample Rate MSPS	Input BW MHz	SNR No. Harmonics	SFDR -dB	SINAD S(N+D) dB	Test Conditions F <sub>IN</sub> MHz F <sub>SAMPLE</sub> MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD7825	8	2	10	NS	55	48	0.03 2	24	\$ 4.70	4-Ch Auto/Manual P/Down	2106
AD7829	8	2	10	NS	55	48	0.03 2	28	\$ 5.45	8-Ch Auto/Manual P/Down	2106

■ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## >20 MSPS, AC Specs Only

Model	# Bits	Sample Rate MSPS	Input BW MHz	SNR No. Harmonics	SFDR -dB	SINAD S(N+D) dB	Test Conditions F <sub>IN</sub> MHz	F <sub>SAMPLE</sub> MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
Single Supply												
AD9066	6	60	100	34	50	34	15	60	28	\$ 8.00	Dual A/D	1905
AD775	8	20	40	48	43	41	5	20	24	\$ 9.95	F <sub>SAMPLE</sub> Rate Min = DC	1345
AD876-8	8	20	150	49	62	49	3.58	20	28/44	\$ 6.12	HI AC Performance	1838
AD9281	8	32	90	49	62	48	10	32	28	\$ 10.00	Dual, +2.7 V to +5.5 V, 175 mW	2117
AD9057	8	40	120	43	60	42	10.3	40	20	\$ 5.70	On-Chip V <sub>REF</sub> , Low Cost	2007
AD9057	8	60	120	43	60	42	10.3	60	20	\$ 7.60	On-Chip V <sub>REF</sub> , Low Cost	2007
AD9057	8	80	120	42.5	60	41.5	10.3	80	20	\$ 11.40	On-Chip V <sub>REF</sub> , Low Cost	2007
AD9059	8	60	120	47	60	46	10.3	60	28	\$ 16.47	Dual A/D	1937
AD9054-135	8	135	380	49	NS	46	2.3	100	44	\$ 28.00	High Input BW, 400 mW	2093
AD9054-200	8	200	380	49	NS	46	2.3	200	44	\$ 48.00	High Input BW, 400 mW	2093
AD9280	8	32	300	48	54	47.5	3.58	32	28	\$ 3.95	With Input Clamp and V <sub>REF</sub>	2163
AD9049	9	30	100	51	NS	50	10.3	30	28	\$ 10.00	400 mW, -60 dBc 2nd & 3rd	1976
AD876	10	20	150	58	62	56	3.58	20	22/44	\$ 13.50	I/O = +3 V or +5 V	1838
AD9200	10	20	300	56	62	54	10	20	28	\$ 6.90	Flexible Input, 70 mW	2114
AD9201	10	20	90	58	68	55	1	20	28	\$ 14.00	Dual, +2.7 V to +5.5 V, 175 mW	2116
AD9050	10	40	100	53.5	65	53	10.3	40	28	\$ 13.00		1843
AD9050-60	10	60	100	52	65	51	10.3	60	28	\$ 17.75	Faster AD9050	1843
AD9051	10	60	140	56	65	55	10.3	60	28	\$ 9.95	50 mW	2164
AD9070	10	100	230	54	NS	52	41	100	28	\$ 80.00	ECL	2052
AD9071	10	100	230	54	NS	52	41	100	28	\$ 80.00	TTL	2035
AD9225	12	25		70	85	NS	10	25	28	\$ 24.95	Pins with AD9220	2166
AD9224	12	40	250	63	65	63	12.5	40	28	\$ 34.95	With Out-of-Range Ind.	2165
AD9042	12	41	100	67	80	67	12.5	41	28/44	\$ 44.10	SFDR = 90 dB with Dither	1922
AD6640	12	65	240	67	79	66.5	32.4	65	44	\$112.00	695 mW w/Dither SFDR = 90 dB	2142

▣ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## Features That Differentiate the AD7701–AD7730 Family

Singles	# Bits	# Current Sources	PGA 1–128	+3 V Operation	100 nA I <sub>SOURCE</sub> Open T/Couple	Int +2.5 V Reference	Read/Write Coefficient	Software Power-Down	Hardware Power-Down
AD7701	16					X			X
AD7703	16					X			X
AD7705	16		X	X			X	X	X
AD7706	16		X	X			X	X	X
AD7715	16		X	X				X	
AD280	18	4 PRGM 50 $\mu$ A > 3 mA	X		w/CJC	X			
AD7710	24	1 20 $\mu$ A	X			X	X	X	
AD7711	24	2 200 $\mu$ A	X			X	X	X	
AD7711A	24	1 400 $\mu$ A	X			X	X	X	
AD7712	24		X			X	X	X	X
AD7713	24	2 200 $\mu$ A	X				X	X	
AD7714	24		X				X	X	X
AD7730/30A	24		X	X			X	X	X
AD7731	24		X	X			X	X	X

Note: All specifications after calibration



# A/D CONVERTERS

## Sigma-Delta, Transducer Interface

Model	# Bits	Power Supply	f <sub>clock</sub> MHz	Sample Rate	Resolution vs. Update Rate Min/Max Bits	Linearity LSBs % FS	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		+V <sub>cc</sub> Volts								

### Clock Programmable Filter, -3 dB Cutoff & Update Rate

AD7701	16	±5 @ 4 mA	4.096	f <sub>CLK</sub> /256	16	0.0015-0.003	20	\$15.00	5-Pole Brickwall Filter	1336
AD7703	20	±5 @ 4 mA	4.096	f <sub>CLK</sub> /256	20	0.0015-0.003	20	\$18.50	5-Pole Brickwall Filter	1337

### Software Programmable Filter, -3 dB Cutoff & Update Rate\*

AD7705	16	+3 or +5 @ 450 µA	1/2.46	f <sub>CLK</sub> /512	16/10	0.012	16	\$ 6.95	3 Pseudo Diff. Channel	2156
AD7706	16	+3 or +5 @ 450 µA	1/2.46	f <sub>CLK</sub> /512	16/10	0.012	16	\$ 6.95	2 Diff Channel, Low Cost/Power	2156
AD7715	16	+3/+5 @ 0.08 mA	1/2.46	f <sub>CLK</sub> /512	21.5/11	0.0015	16	\$ 7.05	Buffered Input, mV Input, Low Cost	1813

AD280	18	+5 @ 6 mA	20			0.0015	44	\$13.00	SPI Interface to µController	2108
-------	----	-----------	----	--	--	--------	----	---------	------------------------------	------

AD7710	24	±5 @ 7/1.5 mA	10	f <sub>CLK</sub> /512	21.5/11	0.0015	24	\$17.00	Optimized for T/Couples	1338
AD7711	24	±5 @ 7/1.5 mA	10	f <sub>CLK</sub> /512	21.5/11	0.0015	24	\$18.00	Optimized for 4-Wire RTD	1339
AD7711A	24	±5 @ 7/1.5 mA	10	f <sub>CLK</sub> /512	21.5/12	0.0015	24	\$18.00	Optimized for 2-Wire RTD	1828
AD7712	24	±5 @ 7/1.5 mA	10	f <sub>CLK</sub> /512	21.5/11	0.0015	24	\$15.50	Optimized for mV Inputs	1340
AD7713	24	+5 @ 1 mA	2.46	f <sub>CLK</sub> /512	22/12	0.0015	24	\$19.00	Optimized for 4-Wire RTD and T/Couples	1341
AD7714	24	+3/+5 @ 0.83 mA	1/2.46	f <sub>CLK</sub> /512	21.5/11	0.0015	24	\$13.00	Optimized for 4-Wire RTD	1812
AD7730	24	+5 @ 7.5 mA	4.92	f <sub>CLK</sub> /16	18/14.5	0.0015	24	\$11.60	W/DAC for Offset/Tare Removal, Scales	1945
AD7730L	24	+5 @ 2.0 mA	4.92	f <sub>CLK</sub> /16	18/14.5	0.0015	24	\$10.60	Low Power Version of AD7730	2112
AD7731	24	+5 @ 13.5 mA	4.92	f <sub>CLK</sub> /16	19/11	0.0015	24	\$11.60	11 Bits @ 6400 Hz Update Rate	2131

### Quad A/D

AD7716	16	±5 @ 5/2.5 mA	8	f <sub>CLK</sub> /512	22/16	0.0015	44	\$35.00	Wide Bandwidth, 99 dBc 584 Hz	1342
--------	----	---------------	---	-----------------------	-------	--------	----	---------	-------------------------------	------

\*SIN(x)<sup>3</sup> Filter response

☐ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## Subsystems: Self-Calibration

Single Channel												
Model	# Bits	# Ch	Power Supply Requirements	Input Voltage Range	Sample Rate	Linearity @ +25°C	V <sub>REF</sub> -Volts		I/O	# Pins	Lowest Grade Price	Comments
			+V <sub>cc</sub> Volts	Volts	kSPS	±Bits	Int	Ext			100s	

### Single Channel

AD7853L	12	1	+3/5 @ 1.3 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	100	1/2 to 1	+2.5	S	24	\$ 7.55	With Power-Down	1814
AD7854L	12	1	+3/5 @ 1.6 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	100	1/2 to 1	+2.5	P12	24	\$ 8.75	With Power-Down, Three-State	2006
AD7853	12	1	+3/5 @ 5.5 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	200	1/2 to 1	+2.5	S	24	\$ 11.00	With Power-Down	1814
AD7854	12	1	+3/5 @ 5.5 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	200	1/2 to 1	+2.5	P12	24	\$ 11.00	With Power-Down, Three-State	2008
AD676	16	1	±12 @ 12 mA	±10	100	1 1/2	+5	P16	24	\$ 31.82		1227
AD677	16	1	±12 @ 12 mA	±10	100	1 1/2		S	16	\$ 29.50		1228
AD7722	16	1	+5 @ 70 mA	V <sub>REF</sub> ± 1 V	200	1	+2.5	P16/S	44	\$ 23.52	220 kSPS max	1942
AD1382	16	1	±15 @ 65 mA, +5 @ 160	±5/10	500	4	+10	P16	DH48	\$595.00	Self-Calibration, Zero Only	1055
AD1385	16	1	±15 @ 75 mA, +5 @ 160	±5/10	500	4	+10	P16	DH48	\$697.00	Self-Calibration, Zero + Linearity	1056

### Multichannel

AD7858L	12	8	+3/5 @ 1.8 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	100	1/2 to 1	+2.5	S	24	\$ 8.15	With Power-Down	1815
AD7859L	12	8	+3/5 @ 1.9 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	100	1/2 to 1	+2.5	P12	44	\$ 13.65	With Power-Down, Three-State	1874
AD7858	12	8	+3/5 @ 6 mA	V <sub>REF</sub> /2	200	1/2 to 1	+2.5	S	24	\$ 11.35	With Power-Down	1815
AD7859	12	8	+3/5 @ 6 mA	±V <sub>REF</sub> /2, 0 to V <sub>REF</sub>	200	1/2 to 1	+2.5	P12	44	\$ 13.85	With Power-Down, Three-State	1874
AD7856	14	8	+5 @ 17 mA	0 to V <sub>REF</sub>	285	1 to 2	+3.47	S	24	\$ 18.00		2085

## Subsystems: Simultaneous Sampling

Model	# Bits	# Ch	# TH	Power Supply Requirements	Input Voltage Range	Conversion Rate	Linearity @ +25°C	Voltage Reference	I/O	# Pins	Lowest Grade Price	Comments	Fax-code
				+V <sub>cc</sub> Volts	Volts	kSPS	±Bits	Int-Volts			100s		
AD7774	8	2	2	±5 @ 5 mA	±2.5	277	1	+1.2	P8	28	\$ 23.20	2 PGAs, 3 8-Bit, 1 11-Bit D/A	1349
AD7777	10	4	2	+5 @ 10 mA	V <sub>BIAS</sub> – V <sub>SWING</sub>	380	1	+2	P10	24	\$ 9.75	I <sub>Q</sub> = 1 mA with CMOS Levels	1351
AD7778	10	8	2	+5 @ 10 mA	V <sub>BIAS</sub> – V <sub>SWING</sub>	380	1	+2	P10	24	\$ 10.70	I <sub>Q</sub> = 1 mA with CMOS Levels	1351
AD7861	11	7	4	+5 @ 10 mA	+2.5	200	2	+2.5	P12	44	\$ 11.76	4 × 12 Output Register	1962
ADMC200	11	4	4	+5 @ 20 mA	+5	100	±2	+2.5	P11	44	\$ 24.64	12-Bit Three Phase Center	1960
ADMC201	11	7	4	+5 @ 20 mA	+5	100	±2	+2.5	P11	44	\$ 28.47	12-Bit Three Phase Center	1961

AD7774	8	2	±5 @ 5 mA	±2.5	277	1	+1.2	P8	28	\$ 23.20	2 PGAs, 3 8-Bit, 1 11-Bit D/A	1349
AD7777	10	4	+5 @ 10 mA	V <sub>BIAS</sub> - V <sub>SWING</sub>	380	1	+2	P10	24	\$ 9.75	I <sub>Q</sub> = 1 mA with CMOS Levels	1351
AD7778	10	8	+5 @ 10 mA	V <sub>BIAS</sub> - V <sub>SWING</sub>	380	1	+2	P10	24	\$ 10.70	I <sub>Q</sub> = 1 mA with CMOS Levels	1351

AD7861	11	7	+5 @ 10 mA	+2.5	200	2	+2.5	P12	44	\$ 11.76	4 × 12 Output Register	1962
ADMC200	11	4	+5 @ 20 mA	+5	100	±2	+2.5	P11	44	\$ 24.64	12-Bit Three Phase Center	1960
ADMC201	11	7	+5 @ 20 mA	+5	100	±2	+2.5	P11	44	\$ 28.47	12-Bit Three Phase Center	1961



# A/D CONVERTERS

## Subsystems: Simultaneous Sampling (Multiple T/H)

Model	# Bits	# Ch	# TH	Power Supply Requirements		Input Voltage Range		Conversion Rate		Linearity @ +25°C		Voltage Reference		# Pins	Lowest Grade Price		Comments	Fax-code
				+V <sub>cc</sub>	Volts	Volts	Volts	kSPS	±Bits	±Bits	V <sub>REF</sub> -Volts	Int-Volts	I/O		# Pins	100s	Price	
AD7874	12	4	4	±5 @ 18 mA		±10		100		1/2 to 1	+3		P12	28		\$ 30.80	4 × 12 Output Register	1373
AD7862	12	4	2	±5 @ 15 mA		±10, ±2.5	+2.5	250		1			P12	28		\$ 12.95	2 SHAs and 2 ADCs	2081
AD7864	12	4	4	±5 @ 16 mA		±10, ±2.5		147		1			P12	44		\$ 16.75	S/Hardware CH Select	2087
AD7863	14	4	2	±5 @ 18 mA		±10, ±2.5	+2.5	210		1 to 2			P12	28		\$ 17.60	2 SHAs and 2 ADCs	2086

## Subsystems: Data Acquisition

Model	# Bits	# Ch	+V <sub>cc</sub>	Power Supply Requirements		Input Voltage Range		Sample Rate		Linearity @ +25°C		V <sub>REF</sub> -Volts		# Pins	Lowest Grade Price		Comments	Fax-code
			Volts	Volts	Volts	Volts	Volts	kSPS	±Bits	±Bits	V <sub>REF</sub> -Volts	Ext	I/O		# Pins	100s	Price	
AD8401	8	4	±5 @ 13 mA		+3			500		1	+1.25		P8	28		\$ 9.00	Three-State Output, 18-Bit D/A	1417
AD7824	8	4	±5 @ 20 mA		2.5			1000		1		+5	P8	24		\$10.45	Three-State Output	1359
AD7825	8	4	±3 @ 15 mA		0 to V <sub>DD</sub>			2000		1	+2.5		P8	24		\$ 4.54	SNR = 47 dB, 0 F <sub>IN</sub> = 200 kHz	2106
AD7828	8	8	±5 @ 20 mA		2.5			1000		1		+5	P8	28		\$10.95	Three-State Output	1359
AD7829	8	8	±3 @ 15 mA		0 to V <sub>DD</sub>			2000		1	+2.5		P8	28		\$ 5.35	SNR = 47 dB, 0 F <sub>IN</sub> = 200 kHz	2106
AD7417	8	8	±2.7 @ 1.3 mA		0 to V <sub>REF</sub>			100		1	+2.5	+1.2	S	16		\$ 4.48	4-Channel Mux & Temp Sensor	2209
AD7817	10	4	±2.7 @ 1.3 mA		0 to V <sub>REF</sub>			100		1	+2.5	+1.2	S	16		\$ 4.48	4-Channel Mux & Temp Sensor	2091
AD7811	10	4	±2.7 @ 2.5 mA		0 to V <sub>REF</sub>			500		1	+2.5		S	16		\$ 3.60	With 4-Channel Mux	2062
AD7812	10	8	±2.7 @ 2.5 mA		0 to V <sub>REF</sub>			500		1	+2.5		S	20		\$ 4.05	With 8-Channel Mux	2062
AD7858L	12	8	±3/5 @ 1.8 mA		V <sub>REF</sub> /2			100		1/2 to 1	+2.5		S	24		\$ 8.15	With Power-Down, Self-Calibration	1815
AD7859L	12	8	±3/5 @ 1.9 mA		V <sub>REF</sub> /2			100		1/2 to 1	+2.5		P12	44		\$13.75	With Power-Down, Self-Calibration, Three-State	1874
AD7890	12	8	±5 @ 10 mA		±10/+4/2.5			100		1		+2.5	S	24		\$12.00	With Power-Down	1382
AD7858	12	8	±3/5 @ 6 mA		V <sub>REF</sub> /2			200		1/2 to 1	+2.5		S	24		\$11.35	With Power-Down, Self-Calibration	1815
AD7859	12	8	±3/5 @ 6 mA		V <sub>REF</sub> /2			200		1/2 to 1	+2.5		P12	44		\$13.85	With Power-Down, Self-Calibration, Three-State	1874
AD7888	12	8	±2.7 @ 0.7 mA		0 to V <sub>REF</sub>			200		1 to 2	+2.5		S	16		\$ 4.50	With 8-Channel Mux, 16 TSSOP	1985
AD7891	12	8	±5 @ 10 mA		All			500		1		+2.5	S/P12	44		\$17.50	With Power-Down	1383
AD7856	14	8	±5 @ 17 mA		0 to V <sub>REF</sub>			285		1 to 2	+3.97		S	24		\$18.00	With Power-Down, Self-Calibration	2085
AD974	16	4	±5 @ 14 mA		0 to 4/5 ±10			200		2 to 3	+2.5		S	28		\$23.52	On-Chip Clock	2415

▣ = New Product since 1997 Short Form Designers' Guide.



# A/D CONVERTERS

## Subsystems: Duals

Model	# Bits	Sample Rate MSPS	Input BW MHz	SNR No. Harmonics	SFDR -dB	SINAD S/(N+D) dB	Test Conditions F <sub>IN</sub> MHz	Test Conditions F <sub>SAMPLE</sub> MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code	
Single Supply													
AD9066	6	60	100	34	50	34	15	60	28	\$ 8.00	Dual A/D	1905	
AD9059	8	60	120	47	60	46	10.3	60	28	\$ 16.47	Dual A/D	1937	
AD9281	8	32	90	49	62	48	10	20	28	\$ 10.00	Dual, +2.7 V to +5.5 V, 175 mW	2117	
AD9201	10	20	90	56	62	54	10	20	28	\$ 14.00	Dual, +2.7 V to +5.5 V, 175 mW	2116	
Dual Supply													
AD9058	8	40	175	46	NS	45	2.3	40	44	\$ 30.45	Dual A/D	1455	
AD10242	12	41	60	65	65	63	9.6	41	68	\$250.00	Dual w/ Input Signal Cond.	2049	
Model	# Bits	# Ch	# TH	Power Supply Requirements +V <sub>cc</sub> Volts	Input Voltage Range Volts	Conversion Rate kSPS	Linearity @ +25°C ±Bits	Voltage Reference Int-Volts	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
Single Supply													
AD7862	12	4	2	+5 @ 15 mA	±10, ±2.5, +2.5	250	1	+2.5	P12	28	\$ 12.95	2 SHAs and 2 ADCs	2081
AD7863	14	4	2	+5 @ 18 mA	±10, ±2.5, +2.5	210	1 to 2	+2.5	P12	28	\$ 17.60	2 SHAs and 2 ADCs	2086



# A/D CONVERTERS

## CCD Signal Processors

Model	# Bits	# Ch	Power Supply Requirements		Input Voltage Range Volts	Sample Rate kSPS	Linearity @ +25°C ±Bits	V <sub>REF</sub> -Volts		I/O	# Pins	Lowest Grade Price		Comments	Fax-code
			+V <sub>CC</sub> Volts	+V <sub>CC</sub> Volts				Int	Ext			100s	Price		
AD9805	10	3	+5 @ 100 mA		+4	6	1	+2		P10	64	\$25.00		With PGA, Digital Gain & Offset Correction	2021
AD9802	10	1	+5 @ 40 mA		+4	18	1	+2		P10	48	\$ 9.60		With CDS, AGC	2195
AD9801	10	1	+5 @ 40 mA		+4	18	1	+2		P10	48	\$ 9.60		With CDS, AGC	2118
AD9807	12	3	+5 @ 100 mA		+4	6	1	+2		P12	64	\$29.95		With PGA, Digital Gain & Offset Correction	2021

## Codecs & I/O Ports

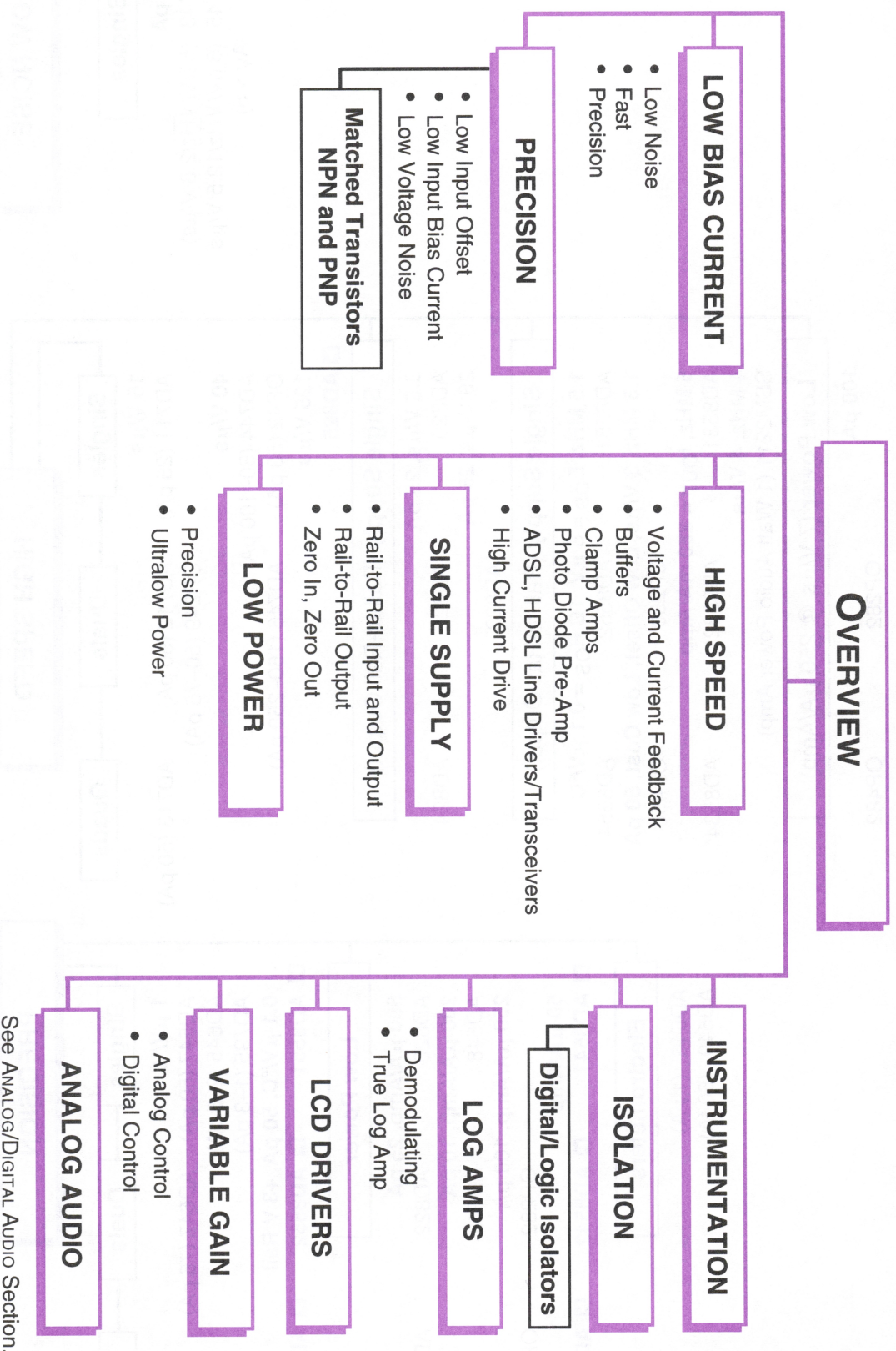
Model	# Bits	# Ch	TH	Power Supply Requirements		Input Voltage Range Volts	Conversion Rate kSPS	Linearity +25°C	Voltage Reference		I/O	# Pins	Lowest Grade Price		Comments	Fax-code
				+V <sub>CC</sub> Volts	+V <sub>CC</sub> Volts				Int-Volts	Ext			100s	Price		
AD7339	8	1	1	±5 @ 45 mA		+1.4 ± 1.4	2000	1	+2.5		P8	52	\$11.45		4-8-Bit D/A, 2 P8, 2 Serial	2119
AD7569	8	1	1	±5 @ 13/4 mA		±2.5	500	1/2 to 1	+1.2		P8	24	\$ 8.80		With 1, 8-Bit D/A	1315
AD7669	8	1	1	±5 @ 18/6 mA		±2.5	500	1	+1.2		P8	28	\$ 9.09		With 2, 8-Bit D/A	1315
AD7769	8	1	1	+5 @ 5 mA		V <sub>BIAS</sub> - V <sub>SWING</sub>	400	1	Ext		P8	28	\$ 9.97		With 2, 8-Bit D/A	1347
AD7774	8	2	2	±5 @ 5 mA		±2.5	277	1	+1.2		P8	28	\$23.20		2 PGAs, 2 T/H, 3 8-Bit, 1 11-Bit D/A	1349
AD8401	8	4	1	+5 @ 13 mA		0 to 3	500	1	+3		P8	28	\$ 9.00		4-Channel MUX	1417
AD7868	12	1	1	±5 @ 12/27 mA		±3	83	1	+3		S	24	\$26.40		With 1, 12-Bit D/A	1368
AD7729	12	2	2	+5 @ 20.5 mA		V <sub>BIAS</sub> - V <sub>REF</sub>	270.3	N/S	+1.5		S	28	\$10.50		Auxiliary 10-Bit D/A, Dual A/D	2153
AD7869	14	1	1	±5 @ 22/12 mA		±3	83	1 to 2	+3		S	24	\$32.00		With 1, 14-Bit D/A	1369
AD7311	16	1	1	+2.7 @ 17.7 mA		1.6 V p-p	64	N/S	+1.2		S	20	\$ 4.75		Input and Output PGA 36 dB	2083
AD7332	16	2	2	+2.7 @ 38 mA		1.6 V p-p	8 to 64	N/S	+1.2		S	28	\$ TBD		Stereo	2446

## Power Meter

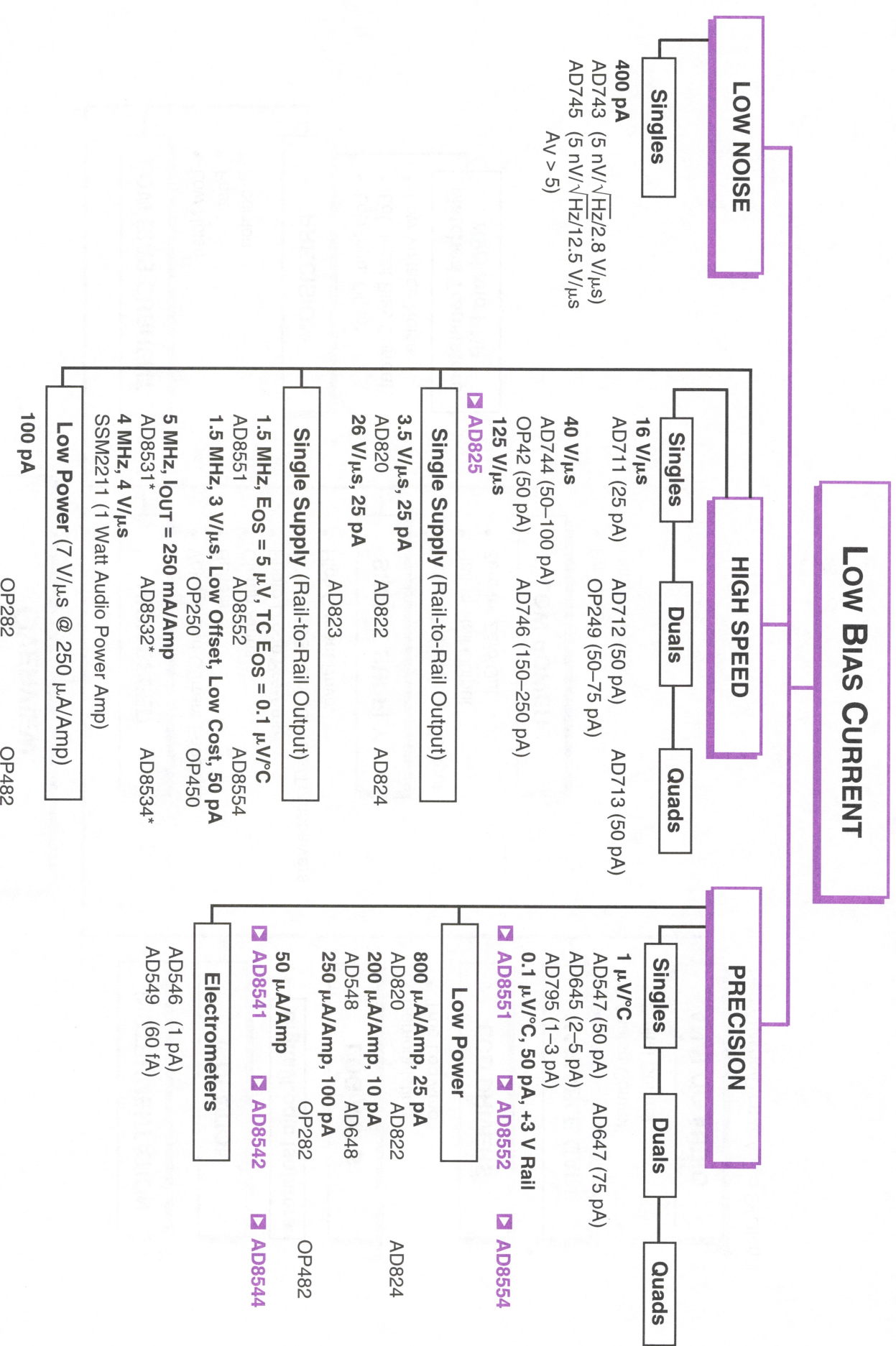
See POWER MANAGEMENT section.

☐ = New Product since 1997 Short Form Designers' Guide.









\*CMOS

▶ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## PRECISION

### LOW INITIAL OFFSET/ INPUT BIAS CURRENT

Singles Duals Quads

75  $\mu\text{V}/4\text{ nA}$

OP07

25  $\mu\text{V}/2\text{ nA}$

OP77

AD707

10  $\mu\text{V}/1\text{ nA}$

OP177

OP200

AD708

OP400

### Super Beta Versions Low Bias Current

25  $\mu\text{V}/100\text{ pA}$

OP97

AD705

OP297

AD706

OP497

AD704

### Choppers

Single Supply +2.7 V to +5 V

5  $\mu\text{V}/50\text{ pA}$ , Rail-to-Rail Input/Output

▶ [AD8551](#) ▶ [AD8552](#) ▶ [AD8554](#)

### LOW VOLTAGE NOISE/ INPUT BIAS CURRENT

Singles Duals Quads

1.2 nV/5  $\mu\text{A}$

AD797

6 nV/0.65  $\mu\text{A}$

OP113

OP213

SSM2135

OP413

### Rail-to-Rail Input/Output

OP184

5 nV/0.35  $\mu\text{A}$

OP176

OP284

OP275

OP285

OP484

### Rail-to-Rail Output

OP279

▶ [SSM2275](#) ▶ [SSM2475](#)

3.5 nV/0.04  $\mu\text{A}$

OP27

OP37

OP270

OP271

OP470

OP471

### MATCHED TRANSISTORS NPN and PNP

Duals Quads

MAT02 NPN

MAT01 NPN

MAT03 PNP

MAT04 NPN

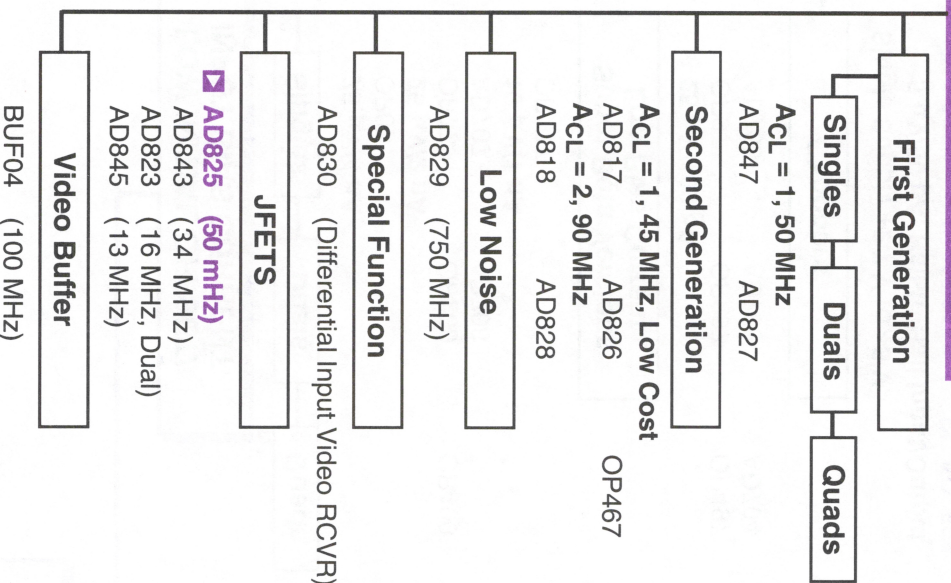
▶ = New Product since 1997 Short Form Designers' Guide.



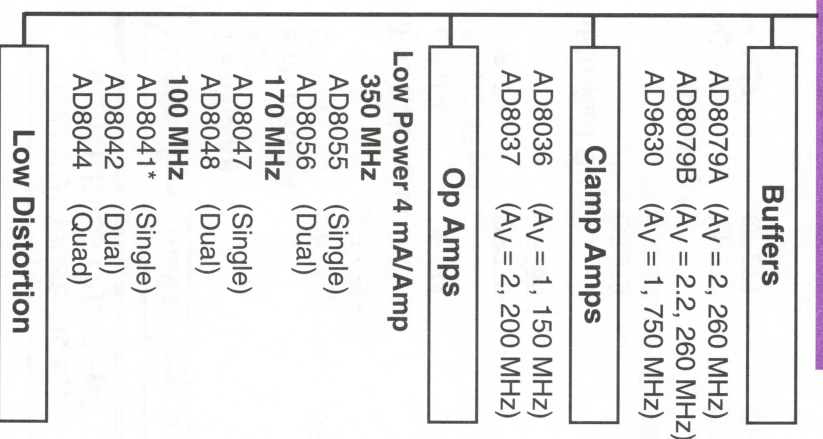
# AMPLIFIERS

## HIGH SPEED VOLTAGE FEEDBACK

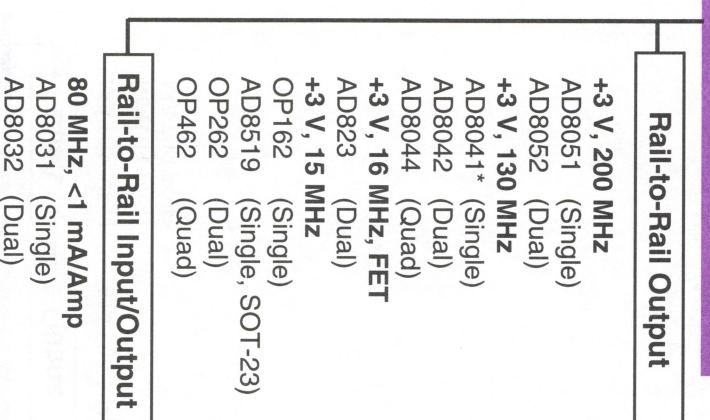
### ±15 V or ±5 V RAILS



### ±5 V RAILS



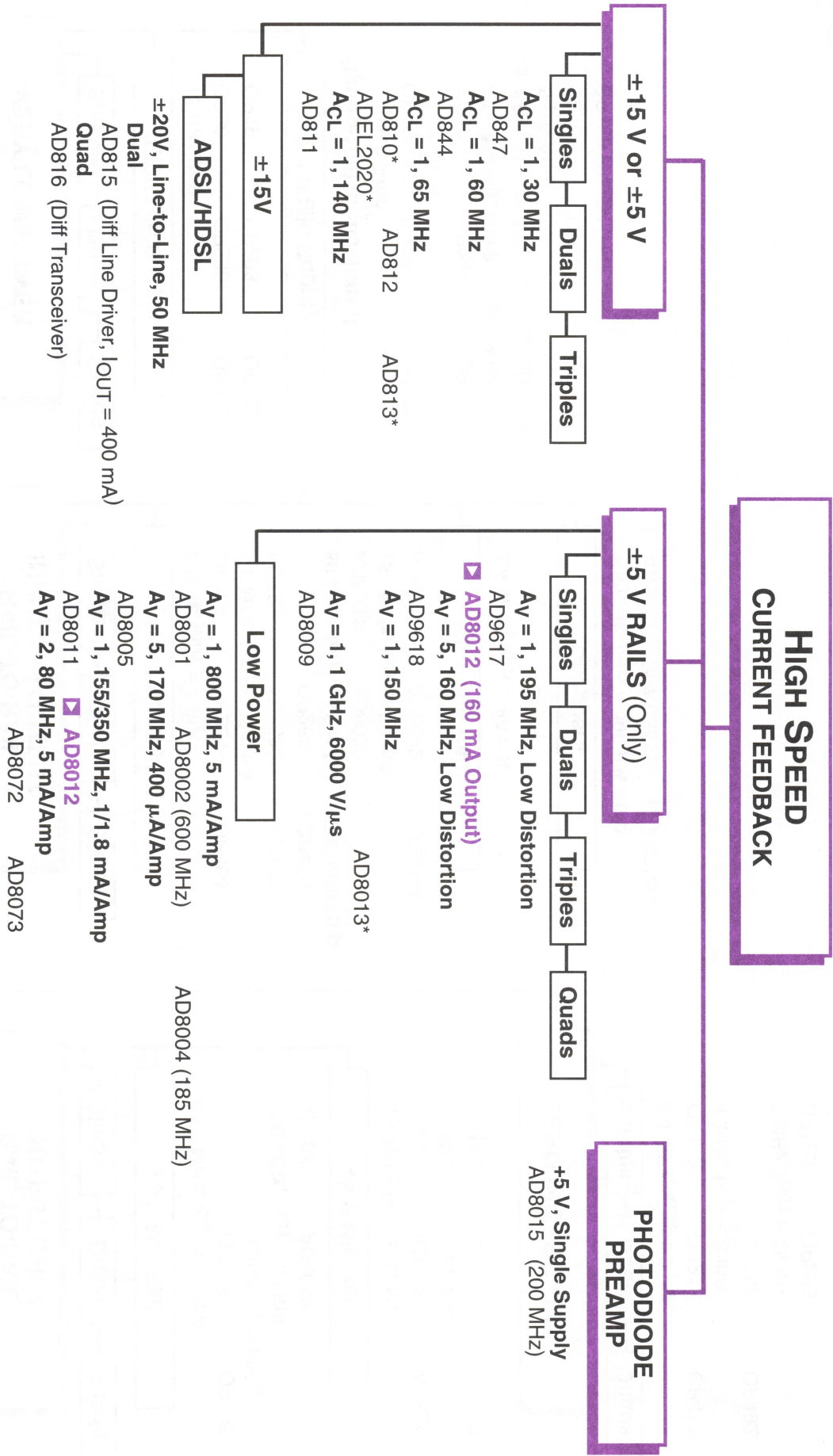
### SINGLE SUPPLY



\*Output Disable Function

▶ = New Product since 1997 Short Form Designers' Guide.

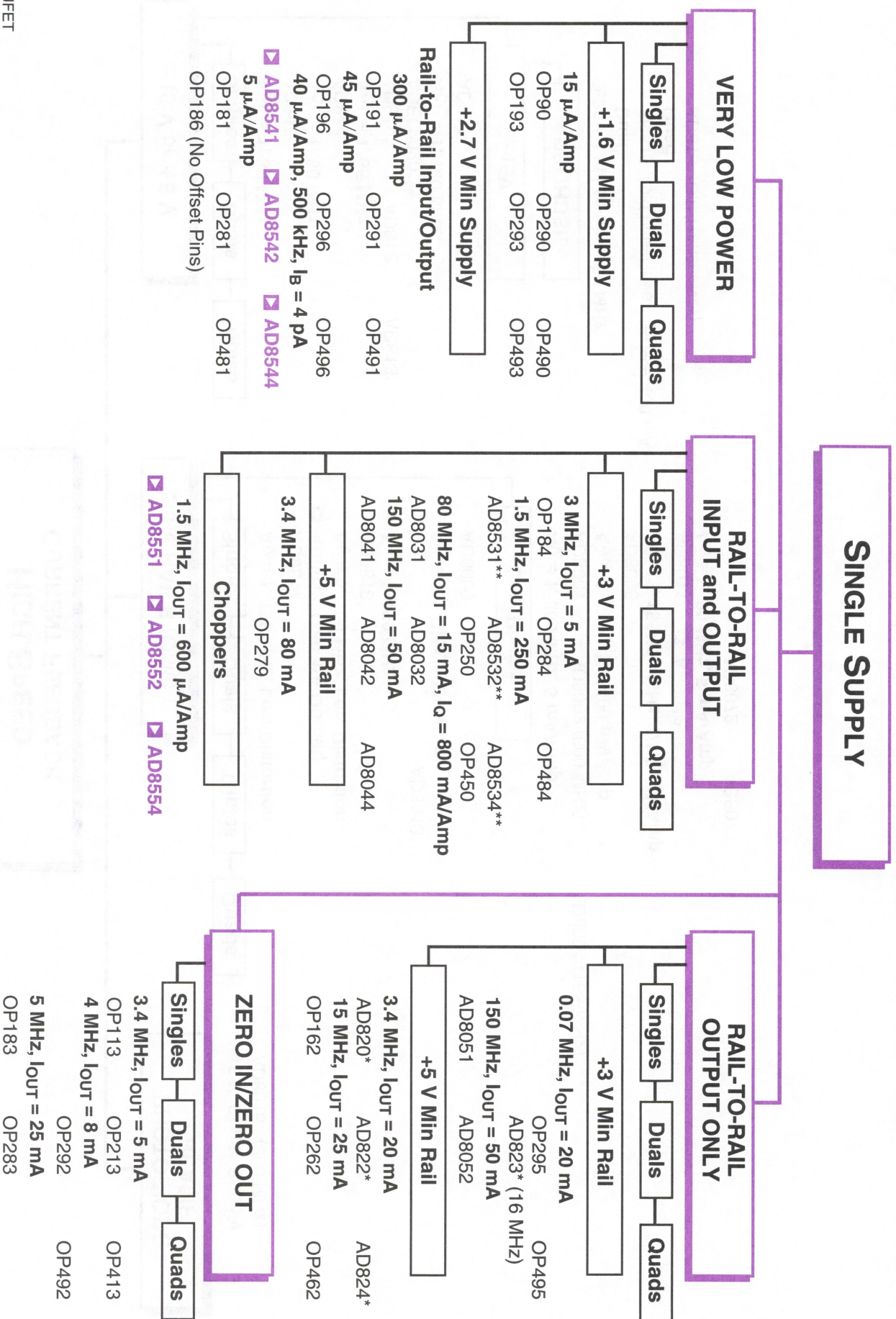




\*Output Disable Function  
❑ = New Product since 1997 Short Form Designers' Guide.



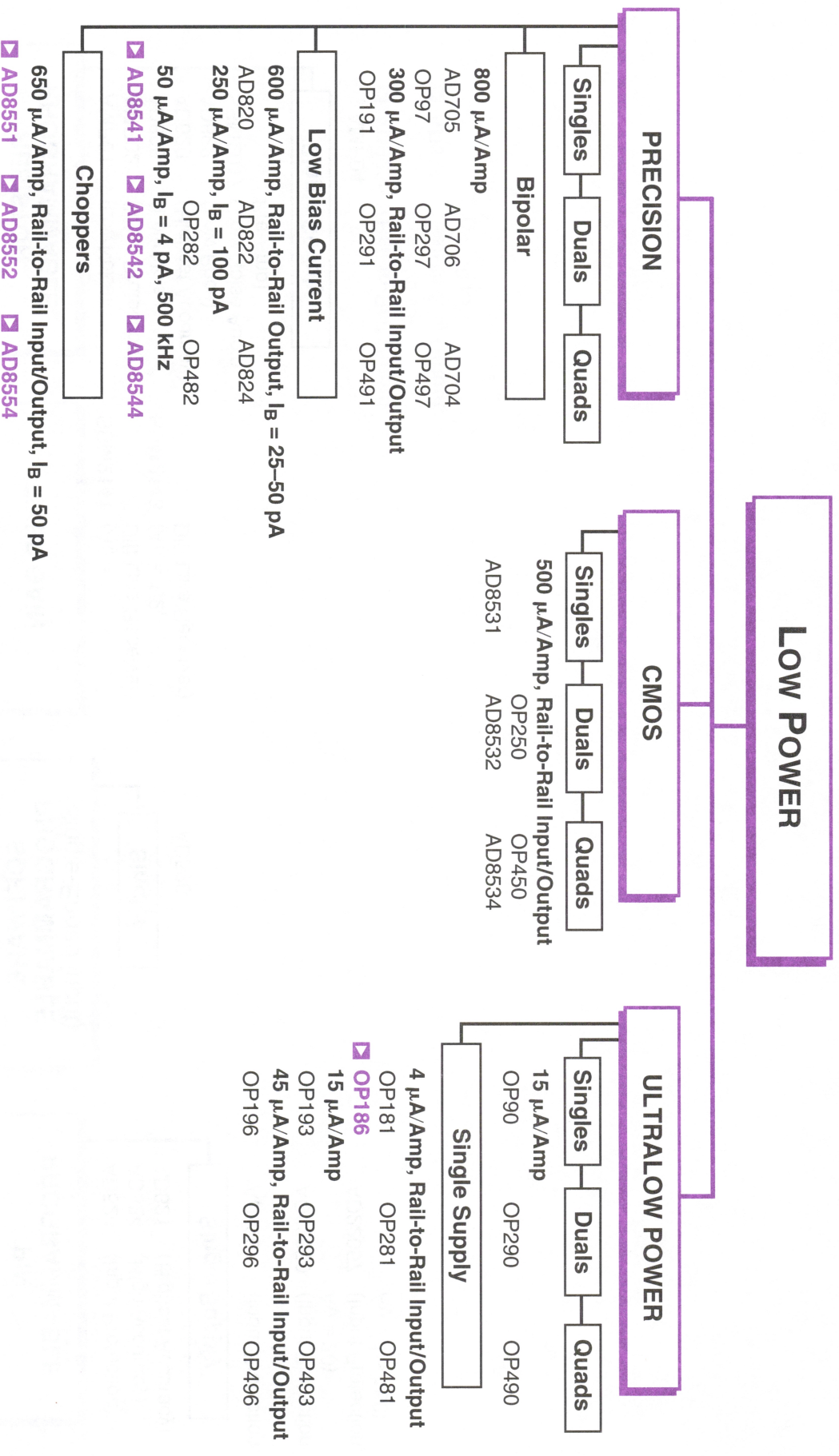
# AMPLIFIERS



\*JFET  
\*\*CMOS

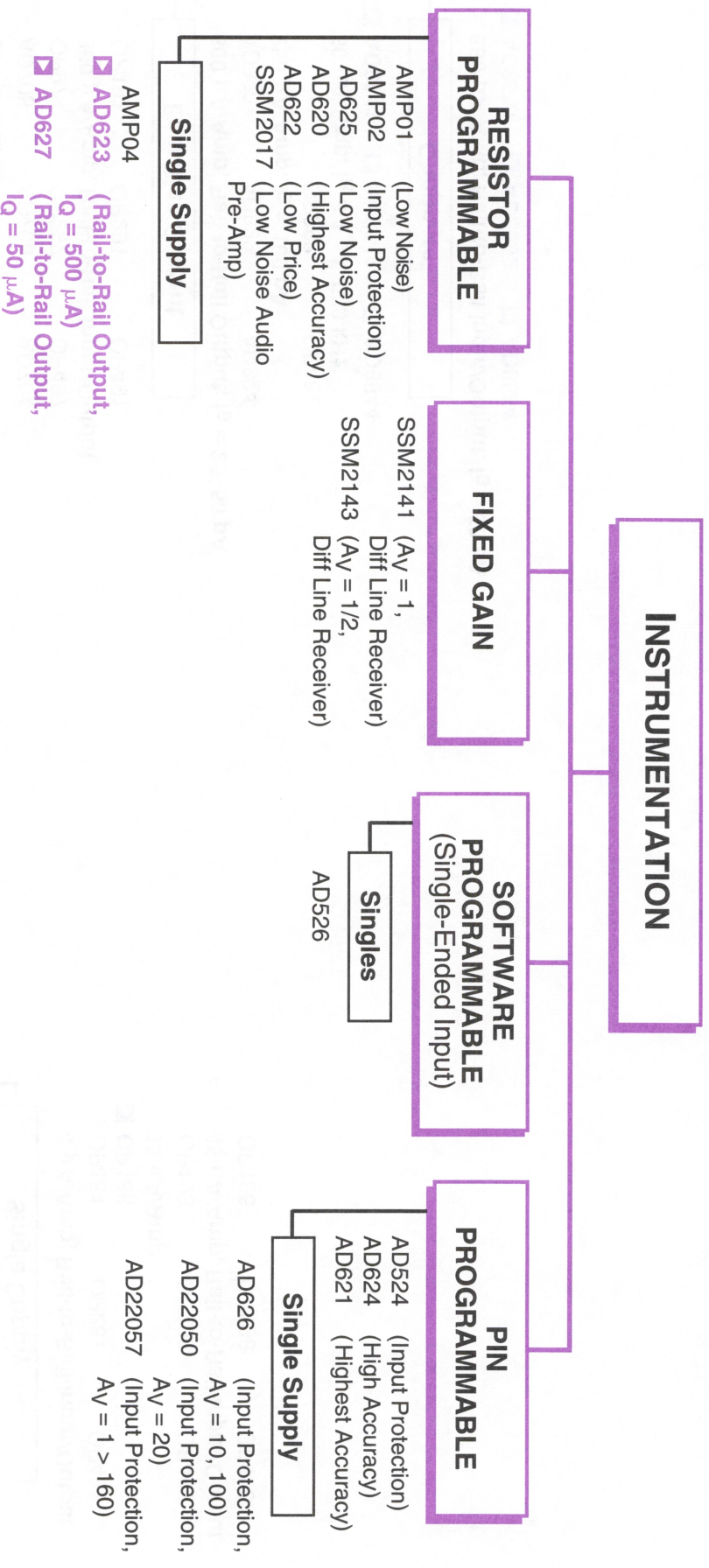
▶ = New Product since 1997 Short Form Designers' Guide.





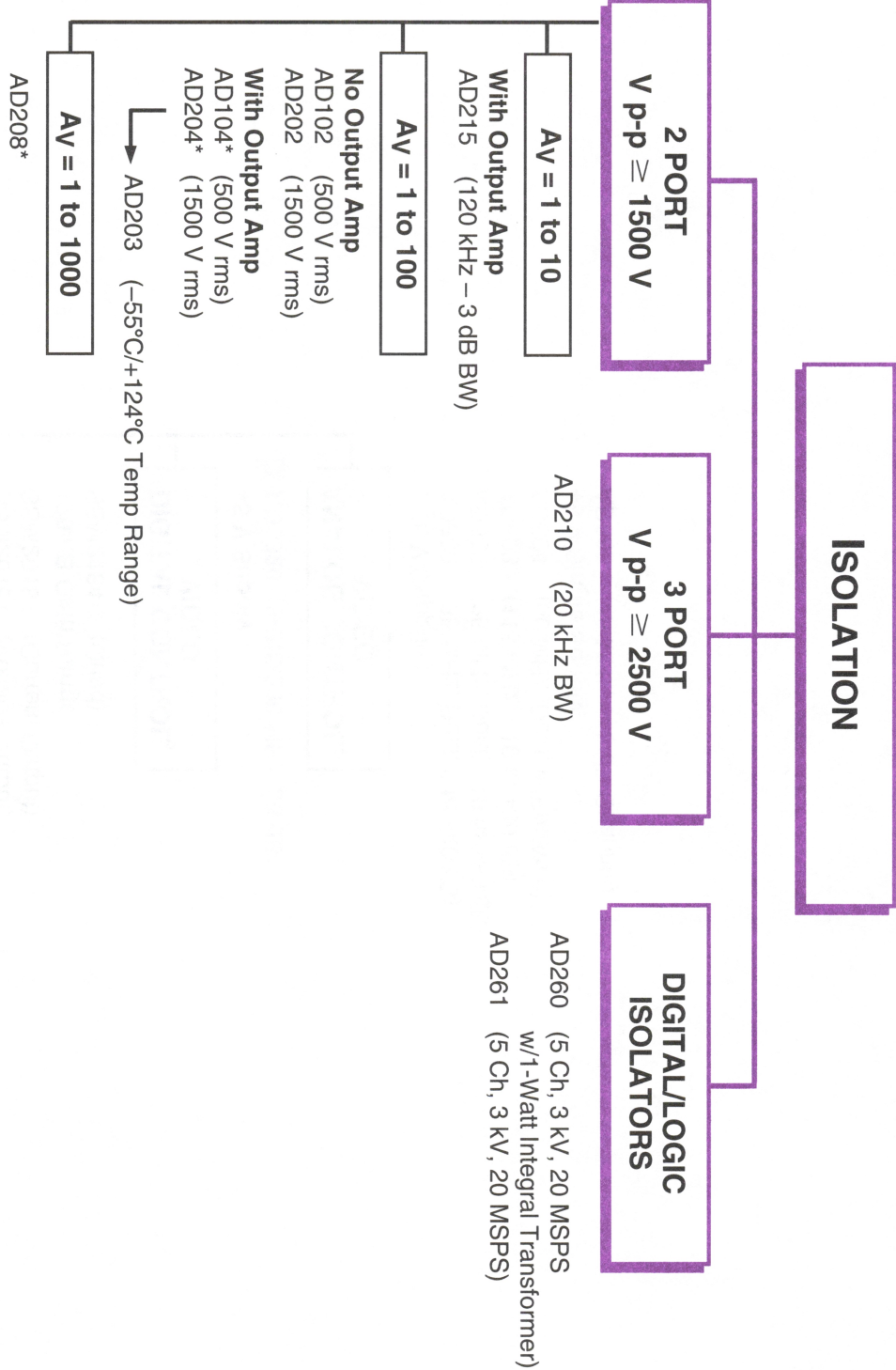
✦ = New Product since 1997 Short Form Designers' Guide.





▶ = New Product since 1997 Short Form Designers' Guide.





\*Multichannel Requires Clock Driver AD246



# AMPLIFIERS

## LOG AMPS

- AD606 (50 MHz, 80 dB, Limiter)
- AD640 (120 MHz, 50 dB)
- AD641 (250 MHz, 44 dB)
- ▶ AD8307 (500 MHz, 86 dB)

## VARIABLE GAIN

### ANALOG CONTROL, AUDIO

- 140 dB Gain Range
- SSM2018T (Voltage Output)
- SSM2018T (Current Output)
- 120 dB Gain Range
- SSM2164 (Quad)

### DIGITAL CONTROL, VIDEO

- +5 V Supply
- ▶ AD8320 (8-Bit, 200 MHz, 36 dB)

### ANALOG CONTROL, VIDEO

- ±15 V Supplies
- AD600 (35 MHz, Dual, 0 to +40 dB)
- AD602 (35 MHz, Dual, -10 to +30 dB)
- AD603 (115 MHz, -10 to +30 dB)
- AD604 (50 MHz, Dual, w/Pre/Amp)
- +5 V Single Supply
- AD605 (45 MHz, +48 dB/Channel)

## LCD DRIVERS

- +3.3 V, 2 Muxed Input Channels/Drivers
- ▶ AD8509 (9 Drivers,  $I_{OUT} = 20$  mA/Ch)
- ▶ AD8511 (11 Drivers,  $I_{OUT} = 20$  mA/Ch)

▶ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Low Bias Current

Model	Open-Loop Gain V/ $\mu$ V	CMRR dB	Initial Offset E <sub>os</sub> $\pm$ mV Max	E <sub>os</sub> vs. Temp $\pm$ $\mu$ V/ $^{\circ}$ C	e <sub>NOISE</sub> nV/ $\sqrt$ Hz @ 1 kHz	I <sub>b</sub> +25 $^{\circ}$ C Max $\pm$ pA	Supply Current I <sub>Q</sub> mA	Unity Gain MHz	Slew Rate V/ $\mu$ s	Lowest Grade Price 100s	Comments	Fax-code
AD549	0.3	80	0.25 to 1	5 to 20	35	0.06 to 0.25	0.7	0.7	2	\$ 8.95	Electrometer Grade JFET	1157
AD515A	0.02	66	3	50	50	0.075 to 0.2	1.5	1	0.3	\$10.25	Electrometer Grade JFET	1138
AD546	0.3	80	1 to 2	20	35	0.5 to 1	0.7	0.7	2	\$ 3.75	FET	1154
AD645A	0.1	90	0.25 to 0.5	1 to 5	9	1 to 5	3.5	2	1	\$ 2.95	Low Noise FET	1211
AD795	0.8	90	0.25 to 0.5	5 to 10	11	2	1.5	2	0.8	\$ 3.80	Low Drift, Noise FET	1392
<b>AD8541</b>	<b>0.1</b>	<b>65</b>	<b>5</b>	<b>TBD</b>	<b>100</b>	<b>4</b>	<b>0.05</b>	<b>0.5</b>	<b>8</b>	<b>\$ TBD</b>	<b>Specs are for +3 V Rail</b>	<b>2205</b>
AD820	0.5	70	0.5 to 1	10	16	5 to 10	0.9	2.25	1.2	\$ 1.50	Rail-to-Rail Output Stage	1406
AD548	0.076	76	0.25 to 2	2 to 20	30	10	0.2	0.8	1	\$ 1.13	FET, CMRR 86 dB C Grade	1156
AD542	0.25	80	0.5 to 2	5 to 20	30	25 to 50	1.5	1	2	\$ 3.47	FET	1151
AD544	0.05	80	0.5 to 2	5 to 20	18	25 to 50	2.5	2	8	\$ 3.41	FET	1151
AD711	0.15	76	0.25 to 2	20	18	25 to 50	3.4	3	16	\$ 0.92	Good Audio Performance	1249
<b>AD825</b>	<b>0.076</b>	<b>71</b>	<b>2</b>	<b>10</b>	<b>12</b>	<b>40</b>	<b>7</b>	<b>23</b>	<b>125</b>	<b>\$ 2.65</b>	<b>High Slew Rate</b>	<b>2403</b>
AD547	0.1	76	0.25 to 1	1 to 5	30	50	1.5	1	3	\$ 3.47	FET	1151
AD8531	0.015	38	25	20	45	50	1.25	3	5	\$ 0.79	Rail-to-Rail In/Out, I <sub>OUT</sub> = 250 mA	1980
<b>AD8551</b>	<b>0.36</b>	<b>110</b>	<b>0.005</b>	<b>0.1</b>	<b>50</b>	<b>50</b>	<b>0.6</b>	<b>1.5</b>	<b>0.8</b>	<b>\$ TBD</b>	<b>Chopper Stabilized, -40<math>^{\circ}</math>C to +125<math>^{\circ}</math>C</b>	<b>2206</b>
AD744	0.2	1	0.45 to 2	3 to 20	18	100	5	NA	45	\$ 2.25	8 MHz @ A <sub>v</sub> = 2	1281
AD705	0.3	110	0.09	0.6 to 1.5	30	150	0.6	0.4	0.1	\$ 1.21	Super Beta	1245
OP97	0.2	110	0.025 to 0.075	2	14	150	0.6	0.4	0.1	\$ 1.13	Super Beta	1723
OP42	0.1	80	0.75 to 5	NS	13	200	6.5	10	40	\$ 2.25	High Slew Rate	1705
AD743	1	80	0.5 to 1	5	3.2	200 to 400	10	4.5	2.8	\$ 3.95	Very Low Noise JFET	1280
AD745	1	80	0.25 to 1	11	3.2	250 to 400	10	20	12.5	\$ 4.35	(Decomp'd 743, High Speed)	1282

## Singles

■ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Low Bias Current

Model	Open-Loop Gain V/ $\mu$ V	CMRR dB	Initial Offset Eos $\pm$ mV Max	Eos vs. Temp $\pm$ $\mu$ V/ $^{\circ}$ C	I <sub>b</sub> +25 $^{\circ}$ C max $\pm$ PA	$e_{NOISE}$ nV/ $\sqrt{Hz}$ @ 1 kHz	Supply Current I <sub>Q</sub> mA	Unity Gain MHz	Slew Rate V/ $\mu$ s	Lowest Grade Price 100s	Comments	Fax- code
-------	------------------------------	------------	---------------------------------------	---	---	---	---	----------------------	----------------------------	----------------------------------	----------	--------------

### Duals

AD822	0.5	70	0.5 to 1	10	5 to 10	16	1.8	2	3.5	\$2.40	Rail-to-Rail Output Stage	1407
AD648	0.076	82	0.3 to 2	3 to 20	10 to 20	30	0.4	0.8	1	\$2.86	Low Power FET	1213
AD823	0.02	60	0.8	20	25	16	8.4	12	14	\$2.65	Rail-to-Rail Output	1907
AD647	0.1	76	0.25 to 1	10	35 to 75	30	2.8	1	3	\$6.80	FET	1212
AD642	0.1	76	0.5 to 2	NS	35 to 75	30	2.8	1	2	\$5.80	FET	1209
AD644	0.03	76	0.5 to 2	NS	35 to 75	18	4.5	2	8	\$5.40	FET	1210
AD712	0.15	76	0.3 to 3	20	50 to 75	18	6.8	3	16	\$1.44	Good Audio Performance	1253
OP249	0.5	76	0.3 to 2	25	50 to 75	17	7	3.5	18	\$1.75	Good Audio Performance	1686
OP250	TBD	60	5	TBD	60	TBD	1	5	2	\$1.25	Rail-to-Rail In/Out, CMOS	1950
OP297	0.8	110	0.05 to 0.2	2	100 to 200	17	1.25	0.5	0.05	\$2.65	Super Beta	1699
AD706	0.2	110	0.05 to 0.1	1.5	110 to 220	15	1.2	0.8	0.15	\$2.71	Super Beta	1246
AD746	0.08	78	1 to 1.5	20	150 to 250	18	10	16	45	\$4.25	Av > 2	1283
AD8532	0.015	38	25	20	50	45	2.5	3	5	\$1.18	Rail-to-Rail In/Out, I <sub>OUT</sub> = 250 mA	1980
OP282	0.020	70	3	10	100	36	0.5	4	7	\$1.19	CMV to + Rail	1692
AD8542	0.1	65	5	TBD	4	100	0.1	0.5	8	\$TBD	Specs are for +3 V Rail	2205
AD8552	0.36	110	0.005	0.1	50	50	1.2	1.5	0.8	\$TBD	Chopper Stabilized, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206

### Quads

AD704	0.2	110	0.075 to 0.1	1.5	150 to 270	15	2.4	0.8	0.1	\$5.46	Super Beta	1244
OP497	1.2	114	0.05 to 0.15	1.5	200	15	2.5	0.5	0.05	\$4.75	Super Beta	1716
AD824	0.02	66	1	20	25	18	2.4	2	2	\$3.75	Rail-to-Rail Output Stage	1810
OP450	TBD	60	5	TBD	60	TBD	2	5	2	\$2.25	Rail-to-Rail In/Out, CMOS	1950
AD713	0.15	78	0.5 to 1.5	20	75 to 150	18	13.5	3	16	\$4.03	Precision Quad FET	1254
OP482	0.02	70	3	10	100	36	1	4	7	\$1.95	CMV to + Rail	1692
AD8534	0.015	38	25	20	50	45	5	3	5	\$1.69	Rail-to-Rail In/Out, I <sub>OUT</sub> = 250 mA	1980
AD8544	0.1	65	5	TBD	4	100	0.2	0.5	8	\$TBD	Specs are for +3 V Rail	2205
AD8554	0.36	110	0.005	0.1	50	50	2.4	1.5	0.8	\$TBD	Chopper Stabilized, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206

■ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Precision

Model	Open-Loop Gain V/ $\mu$ V	CMRR dB	Initial Offset E <sub>os</sub> $\pm\mu$ V	E <sub>os</sub> vs. Temp $\pm\mu$ V/ $^{\circ}$ C	I <sub>b</sub> +25 $^{\circ}$ C Max $\pm$ nA	e <sub>noise</sub> nV/ $\sqrt$ Hz @ 1 kHz	Supply Current I <sub>q</sub> mA	Unity Gain MHz	Slew Rate V/ $\mu$ s	Lowest Grade Price 100s	Comments	Fax-code
AD705	0.3	110	90	0.6 to 1.5	0.15	30	0.6	0.4	0.1	\$ 1.21	Super Beta	1245
AD707	3 to 8	120 to 130	15 to 90	0.1 to 1	2.5 to 1	9.6	3	0.5	0.1	\$ 1.25	Highest Performance	1248
OP184	0.15	86	100 to 175	1 to 1.5	300	3.9	0.03	4.25	1.65	\$ 1.59	Rail-to-Rail In & Out, Single Supply	2037
OP177	2	115 to 130	20 to 60	0.6	1.5 to 2.8	11	2	0.4	0.1	\$ 1.00	Ind. Std., Low Drift, 3rd Generation	1674
AD797	1	114	40 to 80	1	900 to 1500	1.2	10.5	20	12.7	\$ 3.95	Extremely Low Noise, 600 ns to 16 Bits	1394
OP77	2	106 to 120	25 to 100	1.2	2 to 2.8	4.7	2	0.5	0.1	\$ 1.25	Ind. Std., Low Drift, 2nd Generation	1720
OP97	0.2	110	25 to 75	2	0.15	14	0.6	0.4	0.1	\$ 1.13	Super Beta	1723
OP113	1	96 to 100	75 to 150	1.5	600	4.7	2	3.4	0.8	\$ 1.60	Input & Output Pull Down to Zero Volts	1666
OP193	0.5	97	75 to 150	1.5	20	65	0.022	0.03	0.015	\$ 1.49	Rail-to-Rail Output	1857
OP27	0.7	100 to 114	25 to 100	1.8	40 to 80	3.7	4.7	5	1.7	\$ 1.54	Ind. Std., Low Noise Op Amp	1688
OP37	0.7	100	25 to 100	1.8	40 to 80	4.7	4.7	3	11	\$ 1.26	Decomp'd OP27	1701
OP07	0.12	94 to 106	75 to 150	2.5	4 to 12	11	4	0.4	0.1	\$ 1.00	Ind. Std., Low Drift, 1st Generation	1662
AD743	1	80 to 90	250	2	0.25 to 0.4	5	8	4.5	2.5	\$ 3.95	Low Noise JFET	1280
AD745	1	80	250	2	0.15	3.2	8	20	12.5	\$ 3.95	Decomp'd AD743, Min A <sub>v</sub> = 4	1282
OP176	0.25	80	1000	5	350	6	2.5	10	15	\$ 0.96	Butler Input Stage	1673
AD8551	0.36	110	5	0.1	50	50	0.6	1.5	0.8	\$ TBD	Chopper Stabilized, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206

## Duals

AD708	3 to 8	120 to 130	15 to 90	0.1 to 1	2.5 to 1	9.6	5.8	0.5	0.1	\$ 2.95	Highest Performance	1248
AD706	0.2	110	50 to 100	1.5	0.15	15	1.2	0.8	0.15	\$ 2.71	Super Beta	1246
OP200	1.5	110 to 120	75 to 200	2	2 to 5	11	1.45	0.5	0.1	\$ 2.95	Dual OP07	1677
OP213	1	96 to 100	75 to 150	1.5	600	4.7	4	3.4	0.8	\$ 1.90	Input & Output Pull Down to Zero Volts	1666
OP227	0.7	100 to 114	80 to 180	1.8	40 to 80	3.8	4.7	5	1.7	\$ 13.50	Ceramic Package Only	1685
OP284	0.15	86	100 to 175	1 to 1.5	300	3.9	3.5	4.25	1.65	\$ 3.25	Rail-to-Rail Input & Output	1871
OP293	0.5	96 to 100	100 to 250	1 to 2	15 to 20	65	0.06	0.025	0.015	\$ 1.39	Rail-to-Rail Output	1857
OP270	1.5	90 to 106	75 to 250	1 to 3	20 to 60	5	6.5	5	1.7	\$ 3.25	Dual OP27, Low Offset	1689
OP271	0.2	90 to 106	200 to 400	5	20 to 60	7.6	6.5	5	1.7	\$ 3.50	Dual OP27	1690
OP285	0.5	80	250	5	350	7	4	9	15	\$ 1.78	Butler Input Stage	1694
OP295	1	90	500	10	20	51	0.3	0.08	0.03	\$ 2.20	Single Supply, Rail-to-Rail Output	1698
OP275	0.2	86	1000	20	150	7	4	8	15	\$ 1.20	Butler Input Stage	1691
OP297	0.8	110	50 to 200	2	0.15	17	1.25	0.5	0.05	\$ 2.65	Super Beta	1699
SSM2275	TBD	TBD	3000	20	350	7	5	10	15	\$ 0.90	Rail-to-Rail Output, Single Supply	2102
AD8552	0.36	110	5	0.1	50	50	1.2	1.5	0.8	\$ TBD	Chopper Stabilized, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206

▣ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Precision

Model	Open-Loop Gain V/ $\mu$ V	CMRR dB	Initial Offset Eos $\pm\mu$ V	Eos vs. Temp $\pm\mu$ V/ $^{\circ}$ C	Ig +25 $^{\circ}$ C Max $\pm$ nA	en <sub>NOISE</sub> nV/ $\sqrt$ Hz @ 1 kHz	Supply Current Iq mA	Unity Gain MHz	Slew Rate V/ $\mu$ s	Lowest Grade Price 100s	Comments	Fax-code
-------	------------------------------	------------	-------------------------------------	--	---	--	----------------------------	-------------------	-------------------------	-------------------------------	----------	----------

## Quads

AD704	0.2	110	75 to 100	1.5	0.15	15	2.4	0.8	0.1	\$ 5.46	Super Beta	1244
OP497	1.2	114	50 to 150	1.5	0.15	15	2.5	0.5	0.05	\$ 4.75	Super Beta	1716
OP484	0.15	86	100 to 175	1	300	3.9	7	4.25	1.65	\$ 5.85	Rail-to-Rail Input & Output	1871
OP413	1	96 to 100	125 to 275	2	600	4.7	2	3.4	0.8	\$ 3.50	Input & Output Pull Down to Zero Volts	1666
OP493	0.5	96 to 100	125 to 275	4	15 to 20	65	0.12	0.01	0.015	\$ 2.97	Rail-to-Rail Output	1857
OP400	0.8	110 to 120	150 to 300	2.5	3 to 7	11	2.9	0.5	0.15	\$ 5.35	Quad OP07	1702
OP470	0.8	100 to 110	400 to 1000	15	25 to 60	5	4.7	6	1.2	\$ 5.20	Quad OP27	1709
OP495	1	90	500	10	20	51	0.6	0.08	0.03	\$ 3.95	Single Supply, Rail-to-Rail Output	1698
OP471	0.3	100 to 105	800 to 1800	15	25 to 60	5	4.7	6.5	1.4	\$ 5.50	Quad OP27	1710
SSM2475	TBD	TBD	3000	20	350	7	10	10	15	\$ 1.80	Rail-to-Rail Output, Single Supply	2102
AD8554	0.36	110	0.5	0.1	50	50	2.4	1.5	0.8	\$ TBD	Chopper Stabilized, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206

■ = New Product since 1997 Short Form Designers' Guide.



## Matched Transistors, NPN and PNP

Model	V <sub>os</sub> Max μV	TCV <sub>os</sub> Max μV/°C	1 μA	f <sub>FE</sub> @ IC = 10 μA	1 mA	10 mA	f <sub>FE</sub> Match %	e <sub>NOISE</sub> Max @ 10 Hz μV/√Hz	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Dual NPN</b>												
MAT01G/H	500/100	2/0.5	NS	250/500		610/840	8/3	9	6	\$4.25	Very Low IC Operation	1648
MAT02F/E	150/50	1/0.3	200/300	300/400	400/500	NS	4/2	3/2	6/20	\$4.50	Very Low Drift	1649
SSM2210	200	2	NS	200	300	NS	5	2	8	\$2.10	Low Cost, DIP & SOIC	1799
<b>Dual PNP</b>												
MAT03F/E	200/100	1/0.5	NS	60/80	80/100	NS	6/3	4	14	\$5.50	Very High Beta	1650
SSM2220	200	2	NS	60	70	NS	6	2	8	\$2.75	Low Cost, DIP & SOIC	1800
<b>Quad NPN</b>												
MAT04F/E	400/200	2/1	NS	300/400	300/400	NS	4/2	4/3	14	\$3.25		1651



# AMPLIFIERS

## High Speed\*

Model	Feed-back Type	BW -3 dB MHz	Gain Flatness 0.1 dB MHz	Slew Rate V/ $\mu$ s	Settling Time 0.10% ns	E <sub>os</sub> +25°C mV	I <sub>b</sub> $\mu$ A	I <sub>out</sub> mA	I <sub>o</sub> mA	Lowest Grade Price 100s	Comments	Fax-code
AD8009	I	1000		4500	10	6.5	25	50	5.5	\$3.52	$\pm 5$ Rails	2076
AD8011	I	340	20	3500	25	5	15	15	1	\$2.29	$\pm 5$ Rails, Low Power	1863
AD811	I	140	35	2500	50	3	15	100	18	\$3.35	$\pm 15$ Rails	1401
AD9618	I	130		1800	10	2.2	45	60	43	\$9.33	$\pm 5$ Rails, A <sub>v</sub> = 2	1465
AD9617	I	145	NS	1400	10	2.2	50	60	48	\$8.75	$\pm 5$ Rails, Very Low Distortion	1464
AD844	I	60	NS	1200	100	0.3	1.5	20	7.5	\$3.25	$\pm 15$ Rails, Good DC Specs	1421
AD9632	V	250	130	1200	11	5	7	70	18	\$4.85	$\pm 5$ Rails, A <sub>v</sub> = 2, Very Low Distortion	1468
AD810	I	55	15	1000	50	6	5	40	8	\$2.45	$\pm 15$ Rails, with Disable, ADEL2020 Upgrade	1400
AD8055	V	350	30	1000	20	2	1	70	5	\$1.52	$\pm 5$ Rails	2104
AD9631	V	220	130	1000	11	10	7	70	17	\$4.85	$\pm 5$ Rails, Very Low Distortion	1468
AD8001	I	650	85	960	10	5.5	25	50	5.5	\$3.25	$\pm 5$ Rails, Low Power	1396
AD8010	I	180	30	800	25	12	135/12	160	16	\$3.24	Drive 8.75 $\Omega$ Back Terminated Cables	2193
AD8048	V	180	50	740	13	3	3.5	50	6.6	\$2.75	$\pm 5$ Rails, A <sub>v</sub> = 2 min	1868
ADEL2020	I	90	25	500	60	7.5	15	30	10	\$2.34	$\pm 15$ Rails, with Disable, 2nd Source EL2020	1491
AD8047	V	170	35	475	13	3	3.5	50	6.6	\$2.75	$\pm 5$ Rails	1868
AD818	V	100	40	450	45	2	6.6	50	7.5	\$1.99	$\pm 15$ Rails, A <sub>v</sub> = 2 min	1405
AD846	I	80	NS	450	80	0.2	0.45	20	6.5	\$6.88	$\pm 15$ Rails, Good DC Specs	1423
AD8005	I	270	30	375	26	5	1	10	0.5	\$1.71	$\pm 5$ Rails, Very Low Power	2053
AD8051	V	160	20	300	35	2	2	50	5	\$1.00	+2.7 V to $\pm 5$ V Rails, Rail-to-Rail Output	2105
AD830	V	75	11	360	35	3	10	50	17	\$2.85	$\pm 15$ Rails, Diff. Input Video Rcv	1412
AD840	V	40	NS	350	80	1	8	50	14	\$4.15	$\pm 15$ Rails, A <sub>v</sub> = 10 min, High DC Accuracy	1416
AD817	V	45	40	300	45	2	6.6	50	7.5	\$1.79	$\pm 15$ V Rails, Stable with Any Cap Load	1404
AD842	V	40	NS	300	80	1.5	8	100	14	\$4.68	$\pm 15$ V Rails, A <sub>v</sub> = 2 min, High DC Accuracy	1419
AD829	V	750	NS	230	90 @ A <sub>v</sub> = 19	1	7	20	6.8	\$2.95	$\pm 15$ V Rails, Low e <sub>noise</sub> -1.7 nV/ $\sqrt{\text{Hz}}$	1411
AD847	V	50	NS	225	65	1	6.6	20	6	\$2.95	$\pm 15$ V Rails, Stable with Any Cap Load	1424
AD841	V	40	NS	200	90	2	8	50	12	\$4.15	$\pm 15$ Rails High DC Accuracy	1418
AD843	V	34	NS	160	95	2	0.0025	50	13	\$4.79	$\pm 15$ V Rails, FET Input Stage	1420
AD8041	V	140	32	140	50	7	3	50	6.5	\$1.76	Rail-to-Rail Out, with Disable, +3, +5 or $\pm 5$ Rails	1925
AD825	V	44	18	125	180	2	40 pA	50	7	\$2.65	I <sub>B</sub> = 40 pA, JFET Input Stage	2403
AD845	V	12.8	NS	80	250	1.5	0.002	50	12	\$3.58	FET Input Stage	1422
AD8031	V	80	14	30	125	1	1	20	0.9	\$1.65	Rail-to-Rail In/Out, +2.5, +5 or $\pm 5$ Rails	1983
OP162	V	15	NS	10	540	0.325	0.6	30	0.60	\$1.65	+3 V to $\pm 5$ V Rails, Rail-to-Rail Output	1951
AD8519	V	15	NS	4	1200	1.1	0.8	25	0.8	\$TBD	+3 V to +12 V Rails, Rail-to-Rail Output	2439

\*Note:  $\pm 15$  V Rail Amplifiers Also Specified at  $\pm 5$  V

■ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## High Speed

Model	Feed-back Type	BW -3 dB MHz Min	Gain Flatness 0.1 dB MHz	Slew Rate V/ $\mu$ s	Settling Time 0.10% ns	E <sub>os</sub> +25°C mV	I <sub>B</sub> $\mu$ A	I <sub>OUT</sub> mA	I <sub>O</sub> mA	Lowest Grade Price 100s	Comments	Fax-code
-------	----------------	------------------	--------------------------	----------------------	------------------------	--------------------------	------------------------	---------------------	-------------------	-------------------------	----------	----------

### Buffers

BUF04	V	110	NS	2000	60	1	5	50	8.5	\$3.90	$\pm 15$ Rails, $A_V = 1$	1613
AD9630	V	600	NS	1500	16	8	35	50	48	\$7.90	$\pm 5$ Rails, $A_V = 1$	1467
AD8079	V	250	50	750	40	15	6	70	11	\$4.12	$\pm 5$ Rails, $A_V = 2$ or $A_V = 2.2$	2072

### Clamp Amplifiers

AD8037	V	200	130	1100	10	7	70	70	20	\$4.85	Clamp Mode, Noninverting Only, $A_V = 2$ min	1836
AD8036	V	150	130	900	10	7	60	70	20	\$4.85	Clamp Mode, Noninverting Only, $A_V = 1$ min	1836

### Photo Diode Preamplifier

AD8015	I	180	NS	1500	3 to 3%	NA	NA	20	26	\$5.15	155 MHz Photodiode Preamp	1833
--------	---	-----	----	------	---------	----	----	----	----	--------	---------------------------	------

### Duals

AD812	I	75	25	1400	40	5	20	40	11	\$2.92	$\pm 15$ Rails	1402
AD8012	I	350	34	1300	25	4	3	100	1.8	\$3.24	Distortion, -70 dBc @ 0.5 MHz, 100 $\Omega$ Load	2054
AD8002	I	600	60	1200	12	6	25	70	12	\$4.94	IMD @ 10 MHz = 33 dBm, SFDR @ 5 MHz = -66 dB	1834
AD8056	V	350	30	1000	20	2	1	70	5	\$1.88	$\pm 5$ V Rails	2104
AD815	I	100	40	900	70	15	90	500	40	\$5.32	Balanced Diff. Input/Output	1938
AD8072	I	60	10	400	20	5	NS	30	6	\$2.06	$\pm 5$ V or $\pm 5$ V Rails	1977
AD828	V	100	30	400	45	2	6.6	50	NS	\$2.47	$\pm 15$ Rails	1410
AD826	V	45	25	300	45	2	6.6	50	15	\$2.47	Stable with Any Cap Load	1408
AD827	V	50	NS	300	120	4	7	20	6	\$5.31	Stable with Any Cap Load	1409
AD8052	V	160	20	300	35	2	2	50	5	\$1.52	+2.7 V, Rail-to-Rail Output	2105
AD8042	V	125	18	145	32	9.8	4.8	50	7	\$2.65	Rail-to-Rail Out, +3, +5 or $\pm 5$ Rails	1929
AD8032	V	80	14	30	125	1	1	20	1.8	\$3.59	Rail-to-Rail In/Out, +2.5, +5 or $\pm 5$ Rails	1983
OP262	V	15	NS	10	540	0.325	0.6	30	1.2	\$2.38	Low Power, Rail-to-Rail Output	1951

### Triples

AD8023	I	210	60	1000	31			70	6.5	\$4.40	Drive 70 mA into 300 $\Omega$	2192
AD8013	I	110	60	600	60	5	7	25	5.5	\$4.41	With Disable/Amp, Can Drive 200 pF Load	1939
AD8073	I	60	10	400	20	5	TBD	30	6	\$2.65	Low Cost	1977
AD813	I	75	25	150	40	5	30	30	17	\$4.40	$\pm 15$ Rails, with Disable/Amp	1403



## High Speed

Model	Feed-back Type	BW -3 dB MHz	Gain Flatness 0.1 dB MHz	Slew Rate V/ $\mu$ s	Settling Time 0.10% ns	E <sub>os</sub> +25°C mV	I <sub>b</sub> $\mu$ A	I <sub>out</sub> mA	I <sub>Q</sub> mA	Lowest Grade Price 100s	Comments	Fax-code
<b>Quads</b>												
AD8004	I	250	30	3000	21	3.5	110	50	17	\$7.00	+5 V Rails, Low Power	1835
AD816*	I	100	40	900	70	15	90	500	40	\$8.53	Diff. Transceiver, Drive Side Spec	1978
AD816**	V	100	NS	150	NS	1	5	10	40	\$8.53	Receiver Side Spec	1978
AD8044	V	85	1	150	40	6.5	4.5	30	14	\$4.65	Rail-to-Rail Out, +3, +5 or $\pm$ 5 Rails	1940
OP467	V	28	NS	125	NS	0.5	0.6	20	10	\$6.50	$\pm$ 15 Rails, High Accuracy	1708
OP462	V	15	NS	10	540	0.6	0.6	30	2.4	\$3.87	Low Power, Rail-to-Rail Output	1951

## High Current Drive

AD811	I	140	35	2500	50	3	15	100	18	\$3.35	$\pm$ 15 Rails	1401
AD815	I	100	40	900	70	15	90	500	40	\$5.32	Balanced Diff. Input/Output	1938
AD816*	I	100	40	900	70	15	90	500	40	\$8.53	Diff. Transceiver, Drive Side Spec	1978
AD8010	V	225	50	800	25	12	13 5/12	160	16	\$3.24	Drive 8.75 $\Omega$ Back Term Cables	2193
AD842	V	40	NS	300	80	1.5	8	100	14	\$4.68	$\pm$ 15 V Rails, A <sub>v</sub> = 2 min, High DC Accuracy	1419
AD816**	V	100	NS	150	NS	1	5	10	40	\$8.53	Receive Side Spec	1978

## Single Supply

Model	Min Supply Volts	Open-Loop Gain V/ $\mu$ V	Common-Mode Rejection CMRR dB	Unity Gain BW MHz	Slew Rate V/ $\mu$ s	Initial Offset E <sub>os</sub> $\pm$ mV Max	E <sub>os</sub> vs. Temp $\pm\mu$ V/ $^{\circ}$ C	I <sub>b</sub> +25°C Max $\pm$ nA	I <sub>Q</sub> +25°C Max mA	I <sub>out</sub> mA	Lowest Grade Price 100s	Comments	Fax-code
<b>Singles</b>													
<b>Rail-to-Rail Input &amp; Output</b>													
AD8531	+3	0.02	38	3.5	3.4	25	150	50 pA	1.25	250	\$0.79	CMOS	1980
AD8541	+3	0.1	65	0.5	8	5	TBD	4	0.04	10	\$1BD	Very Low Power	2205
AD8551	+3	0.3	110	1.0	0.5	0.5 $\mu$ V	0.1	0.05	0.3	8	\$1BD	Chopper, -40°C to +125°C	2206
AD8031	+2.7	NS		54	30	1	2	1000	0.9	20	\$1.65	Low Power	1983
SSM2211	+2.7	TBD	60	TBD	3.4	5	TBD	250 pA	1	250	\$0.79	Audio Power Amp	1979
OP191	+5	0.025	70	3	0.4	0.5	15	50	0.4	5	\$1.54	Low Power	1696
OP196	+3	0.1	60	0.35	0.3	0.3	5	30	0.05	4	\$1.40	Very Low Power	1926
OP184	+3	NS	60	0.035	2.5	0.125	1	300	1.1	NS	\$1.59	OP07 Type Performance	1871

\*As a Driver.

\*\*As a Receiver.

□ = New Product since 1997 Short Form Designers' Guide.



## Single Supply

Model	Min Supply Volts	Open-Loop Gain V/ $\mu$ V	Common-Mode Rejection CMRR dB	Unity Gain BW MHz	Slew Rate V/ $\mu$ s	Initial Offset Eos $\pm$ mV	Eos vs. Temp $\pm\mu$ V/ $^{\circ}$ C	I <sub>b</sub> Max $\pm$ nA	I <sub>o</sub> Max mA	I <sub>OUT</sub> mA	Lowest Grade Price 100s	Comments	Fax-code

## Singles

### Rail-to-Rail Output

AD8041	+3	92 dB	80	120	120	0.3	40	2500	5.5	30	\$1.76	Wide Bandwidth	1925
OP162	+2.7	0.03	70	15	10	0.325	8	600	0.65	25	\$1.65	Fast, Low Power	1951
AD820	+3	0.3	60	1.8	3	1	20	25 pA	0.8	10	\$1.80	Input CMV Range, 0-1 V	1406
OP181	+3	0.005	65	0.025	0.025	1.5	10	10	0.004	1	\$1.70	Ultralow Power	2075
OP186	+3	0.005	65	0.025	0.025	1.5	10	10	0.004	1	\$1.70	No Offset Adjust Pins	2096
AD8051	+2.7	TBD	TBD	160	300	2	TBD	2000	TBD	50	\$1.00	Very High Speed	2105
OP183	+3	0.1	70	5	5	1	20	600	1.5	25	\$1.58	0 to 2 V <sub>OUT</sub>	1675
OP113	+5	2	90	3.4	0.6	0.175	4	650	1.75	30	\$1.60	0 to 4 V <sub>OUT</sub>	1666
OP193	+2	0.06	NS	0.035	0.01	0.15	1.5	20	0.02	1	\$1.49	0 to 1.5 V <sub>OUT</sub>	1857

## Duals

### Rail-to-Rail Input & Output

AD8032	+2.5	NS		54	14	1	2	1000	1.8	20	\$2.65	Low Power	1983
OP250	+3	0.02	60	3.5	5	5	5	60 pA	1	250	\$1.25	CMOS, Low Offset	1950
AD8532	+3	0.02	38	3.5	3.4	5	50	50 pA	2.5	250	\$1.18	CMOS	1980
AD8542	+3	0.1	65	0.5	8	5	TBD	4	0.08	10	\$TBD	Very Low Power	2205
AD8552	+3	0.3	110	1	0.5	0.005	0.1	0.05	1.2	8	\$TBD	Chopper, -40°C to +125°C	2206
OP279	+5	0.1	56	5	3	4	4	600	3.5	50	\$1.25	Audio Headphone Amp	1811
OP284	+3	NS	60	3	1.6	0.06	1	300	2.3	6.5	\$3.25	OP27 Type Performance	1871
OP291	+3	0.025	70	3	0.4	0.7	5	50	0.7	1	\$2.00	Low Offset, High Speed	1696
OP296	+3	0.1	60	0.35	0.3	0.3	5	30	0.1	4	\$1.63	Very Low Power	1926

### Rail-to-Rail Output

AD8042	+3	92 dB	80	120	120	3	40	2500	11	30	\$2.65	Voltage Feedback	1929
OP262	+2.7	0.03	70	15	10	0.325	8	600	1.3	25	\$2.38	High Speed	1951
AD823	+3.3	0.015	54	12	13	1.5	20	25 pA	5.7	25	\$2.65	JFET, $\pm$ 15 V Rail Operation	1907
AD822	+3	0.3	60	1.8	3	1	20	25 pA	1.6	10	\$2.40	Input CMV Range, 0 to 1 V	1407
OP295	+3	0.75	90	0.075	0.03	NS	NS	20	0.3	NS	\$2.20	Low Power	1698
OP281	+3	0.005	65	0.025	0.025	1.5	10	10	0.008	1	\$2.59	Very Low Power	2075
AD8052	+2.7	TBD	TBD	160	300	2	TBD	2000	TBD	50	\$1.88	Very High Speed	2105
SSM2275	TBD	TBD	TBD	10	15	3000	20	350	5	20	\$1.11	Rail-to-Rail Output, Single Supply	2102

■ = New Product since 1997 Short Form Designers' Guide.



## Single Supply

Model	Min Supply Volts	Open-Loop Gain V/ $\mu$ V	Common-Mode Rejection CMRR dB	Unity Gain BW	Slew Rate V/ $\mu$ s	Initial Offset E <sub>os</sub> $\pm$ mV	E <sub>os</sub> vs. Temp $\pm\mu$ V/ $^{\circ}$ C	I <sub>b</sub> Max $\pm$ nA	I <sub>q</sub> Max mA	I <sub>out</sub> mA	Lowest Grade Price 100s	Comments	Fax-code
-------	------------------	---------------------------	-------------------------------	---------------	----------------------	---	---	-----------------------------	-----------------------	---------------------	-------------------------	----------	----------

### Duals

#### Zero Input, Zero Output

OP283	+3	0.1	70	5	5	1	20	600	3	25	\$2.39	0 to 2 V <sub>OUT</sub> , High Speed	1675
OP292	+5	0.025	75	4	1.5	0.8	15	700	2.4	5	\$1.39	0 to 4 V <sub>OUT</sub> , High Speed	1697
OP213	+5	2	90	3.4	0.6	0.175	4	650	1.75	30	\$1.90	0 to 4 V <sub>OUT</sub> , Low Offset	1666
SSM2135	+5	2	87	3.4	0.6	2	NS	750	4	30	\$2.10	0 to 4 V <sub>OUT</sub>	1794
OP293	+2	0.06	94	0.035	0.01	0.25	2	20	0.04	1	\$2.20	Very Low Power, 0 to 2 V <sub>OUT</sub>	1857

### Quads

#### Rail-to-Rail Input & Output

AD8534	+3	0.02	38	3.5	3.4	25	150	50 pA	5	250	\$1.69	CMOS	1980
AD8544	+3	0.1	65	0.5	8	5	TBD	4	0.16	10	\$TBD	Very Low Power	2205
AD8554	+3	0.3	110	1	0.5	0.005	0.1	0.05	2.4	8	\$TBD	Chopper, -40 $^{\circ}$ C to +125 $^{\circ}$ C	2206
OP450	+3	TBD	60	0.035	5	5	TBD	60 pA	2	250	\$2.25	CMOS	1950
OP484	+3	0.05	60	3	1.6	0.10	1.0	300	4.6	6.5	\$5.85	OP27 Type Performance	1871
OP491	+3	0.025	70	3	0.4	0.7	5	60	1.4	5	\$3.28	Low Offset, High Speed	1696

#### Rail-to-Rail Output

AD8044	+3	0.09	80	80	120	3	40	2500	13.1	30	\$4.65	Wide Bandwidth	1940
OP462	+5	0.03	70	15	10	0.325	8	600	2.6	25	\$5.81		1951
AD824	+3	0.25	60	1.8	3	1	20	25 pA	1.6	8	\$3.89	Input CMV Range, 0 to 1 V	1810
OP496	+3	0.1	60	0.35	0.3	0.3	5	30	0.2	5	\$4.00	Very Low Power	1926
OP495	+3	0.75	90	0.075	0.03	0.3	5	20	0.3	11	\$3.95		1698
SSM2475	TBD	TBD	TBD	10	15	3000	20	350	10	20	\$1.80	Rail-to-Rail Output, Single Supply	2102

#### Zero Input, Zero Output

OP492	+5	0.025	75	4	1.5	1	25	700	4.8	5	\$2.46	0 to 4 V <sub>OUT</sub>	1697
OP413	+5	2	90	3.4	0.6	0.325	5	650	1.75	30	\$3.50	0 to 4 V <sub>OUT</sub>	1666
OP493	+2	0.06	94	0.035	0.01	0.275	5	20	0.09	1	\$2.97	Very Low Power, 0 to 1 V <sub>OUT</sub>	1857
OP481	+3	0.005	65	0.025	0.025	1.5	10	10	0.016	1	\$4.70	Very Low Power	2075



## Low Power\*

Model	Min Rail Volts	Open-Loop Gain V/ $\mu$ V	Common-Mode Rejection CMRR dB	Initial Offset Eos $\pm$ mV Max	Eos vs. Temp $\pm$ mV/ $^{\circ}$ C	Total Supply Current I <sub>Q</sub> $\mu$ A	Slew Rate V/ $\mu$ s	Unity Gain MHz	Lowest Grade Price 100s	Comments	Fax-code
<b>Singles</b>											
OP181	+3	0.005	65	1.5	10	4	0.025	0.025	\$1.70	With Trim Terminals	2075
OP186	+3	0.005	65	1.5	10	4	0.025	0.025	\$1.70	Without Trim Terminals	2096
OP90	+5	0.4	80	0.45	5	15	0.005	NS	\$1.70	Mil Temp Range, -55 $^{\circ}$ C to +125 $^{\circ}$ C	1722
OP193	+2	0.06	94	0.075	3	44	0.01	0.025	\$1.49	Input and Output Pull Down to V <sub>SS</sub>	1857
OP196	+3	0.1	60	0.3	5	50	0.3	0.2	\$1.40	Rail-to-Rail Input and Output	1926
<b>Duals</b>											
OP281	+3	0.005	65	1.5	10	8	0.025	0.025	\$2.59	Rail-to-Rail Output	2075
OP290	+5	0.1	80	0.2 to 0.5	3 to 5	30	0.005	NS	\$2.50	Mil Temp Range, -55 $^{\circ}$ C to +125 $^{\circ}$ C	1695
OP293	+2	0.06	NS	0.15	3	44	0.01	0.025	\$2.25	Input and Output Pull Down to V <sub>SS</sub>	1857
OP296	+3	0.1	60	0.3	5	100	0.3	0.2	\$1.63	Rail-to-Rail Input and Output	1926
OP220	+5	0.3	75	0.75	3	135	0.05	NS	\$2.13	Low Offset and Drift	1683
OP295	+3	0.75 typ	90	0.5	5	300	0.03	0.075	\$2.20	Rail-to-Rail Output	1698
<b>Quads</b>											
OP481	+3	0.005	65	1.5	10	16	0.025	0.025	\$TBD	Lowest Power Quad	2075
OP490	+3 to 36	0.2	80	1	9	60	0.005	0.02	\$3.30	Mil Temp Range, -55 $^{\circ}$ C to +125 $^{\circ}$ C	1712
OP493	+2	0.06	94	0.12/0.275	5	88	0.01	0.035	\$2.97	Input and Output Pull Down to V <sub>SS</sub>	1857
OP496	+3	0.1	60	0.3/0.8	5	200	0.3	0.2	\$2.50	Rail-to-Rail Input & Output	1926
OP495	+3	0.75 typ	90	0.5	5	600	0.03	0.075	\$3.95	Rail-to-Rail Output	1698

\*These amplifiers are also specified on the data sheet at  $\pm 6$  V or  $\pm 15$  V, +3 V and +5 V rails. They are depicted here at the minimum rail at which they are specified.



# AMPLIFIERS

## Instrumentation

Model	Gain Range			-3 dB BW MHz	V <sub>NOISE</sub> RTI 1 to 10 Hz μV p-p	V <sub>OS</sub> RTI +25°C μV	V <sub>OS</sub> RTI μV/°C	# Pins	Lowest Grade Price 100s	Comments	Fax- code
	1 mV	10 mV	100 mV								

### Resistor Programmable

SSM2017	501.00	512.00	620	1700	NS	1200	NS	8/16	\$ 1.80	Ultralow Distortion Audio Preamp	1782
AMP01F/G	6.1	7	16	106	0.57 to 0.026	13	100	18/20/28	\$ 8.90		1607
AMP01E/A	3.05	3.5	8	53	0.57 to 0.026	13	50	18/20/28	\$16.90		1607
AMP02F	8.2	10	28	208	1.2 to 0.2	10	200	4 8/16	\$ 5.25	Wide Bandwidth	1608
AMP02E	4.1	5	14	104	1.2 to 0.2	10	100	2 8/16	\$ 8.75		1608
AMP04F	3.3	6	33	303	0.7 to ns	7	300	6 8	\$ 4.95	Single Supply	1610
AMP04E	1.65	3	16.5	152	0.7 to ns	7	150	6 8	\$ 6.95	Single Supply	1610
AD620A	0.53	1.65	12.9	125.4	0.8 to 0.012	6	125	1.0 8	\$ 3.85		1197
AD620B	0.25	0.7	5.2	50.2	0.8 to 0.012	6	50	0.6 8	\$ 5.78		1197
AD622A	1.75	4	15	250	0.8 to 0.012	6	125	2 8	\$ 2.94		1986
AD623	1.1	11	110	1110	0.8 to 0.02	NS	100	1 8	\$ 1.82	Single Supply, I <sub>Q</sub> = 500 μA	2138
AD625J/A	5.2	7	25	205	0.6 to 0.025	4	200	2 16/20	\$ 9.64	Gain to 10,000	1200
AD625K/B	3.05	3.5	8	53	0.6 to 0.025	4	50	1 16/20	\$10.83		1200
AD625C	2.025	2.25	4.5	27	0.6 to 0.025	4	25	0.25 16/20	\$30.80	Very Low Drift	1200

### Software Programmable

AD526A	1.5	12	NA	NA	9	1.5	20	16	\$ 5.77	Program Gains 1, 2, 4, 8	1144
AD526B	0.7	5.6	NA	NA	9	0.7	10	16	\$10.94		1144
AD526C	0.5	4	NA	NA	9	0.5	10	16	\$23.54		1144

### Pin Programmable

AD524A	5.25	7.5	30	255	1 to 0.025	15	250.00	2 16/20	\$10.89	Program Gains 1, 10, 100, 1000	1142
AD524B	3.1	4	13	103	1 to 0.025	15	100.00	0.75/2 16/20	\$17.10		1142
AD524C	2.05	2.5	7	52	1 to 0.025	15	50.00	0.50 16/20	\$27.50		1142
AD621A	NA	2.5	25	NA	0.4 to 0.15	6	250	15 8	\$ 4.50	Program Gains 10, 100	1198
AD621B	NA	1.25	12.5	NA	0.4 to 0.15	6	125	7 8	\$ 6.75		1198
AD624A	5.2	7	25	205	1 to 0.025	10	200	2 16	\$13.09	Program Gains 1, 100, 500, 1000	1199
AD624B	3.075	3.75	10.5	78	1 to 0.025	10	75	0.5 16	\$21.45		1199
AD624C	2.025	2.25	4.5	27	1 to 0.025	10	25	0.25 16	\$32.13		1199

### Single Supply, High Side Signal Conditioner with RTI Input Attenuation

AD626	20	200	0.1	2	200	NA	8	8	\$ 3.25	Pin Program Gains, 10, 100	1201
AD22050	1	20	0.02	2	1	15	8	8	\$ 4.75	Fixed A <sub>V</sub> = 20, or Adj. 1 > 160, +3 V > 36	1883
AD22055	11						8	8	\$ 5.79	Fixed A <sub>V</sub> = 40, or Adj. 1 > 160	1915
AD22057	1	20	0.02	2	1	15	8	8	\$ 5.61	Fixed A <sub>V</sub> = 20, or Adj. 1 > 160	1914

■ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Isolation Amplifiers

Model	# Ports	Power Supply		CMV @ 60 Hz V rms	Isolation Mode Rejection dB	Bandwidth $A_V = 1$ kHz	Linearity $\pm\%$ Max	Output Offset RTI +25°C		TC $\pm\mu\text{V}$ Max	Output Amplifier		Lowest Grade Price 100s	Comments	Fax-code
		Volts	mA					$\pm\text{mV}$ Max	$\pm 25^\circ\text{C}$		Yes	No			
<i><math>A_V = 1</math> to 10</i>															
AD215	2	$\pm 15$	40/18	750 to 1.5K	120	120	0.025	$\pm 80 \pm 2/A_V$	$\pm 50 \pm 10/A_V$	X	X		\$45.00	THD -80 dB, 1 kHz	1981
<i><math>A_V = 1</math> to 100</i>															
AD203S	2	$\pm 15$	20	1500	106	10	0.025	$\pm 5 \pm 25/A_V$	$\pm 6 \pm 100/A_V$	X	X		\$87.12	-55 to +125 Range	1084
AD102J	2	$\pm 15$	5	500	100	1.5	0.05	$\pm 15 \pm 15/A_V$	$\pm 10 \pm 10/A_V$			X	\$18.00		1819
AD202J	2	$\pm 15$	5	750	105	2	0.05	$\pm 15 \pm 15/A_V$	$\pm 10 \pm 10/A_V$			X	\$28.00		1081
AD202K	2	$\pm 15$	5	1.5K	100	5	0.025	$\pm 5 \pm 5/A_V$	$\pm 10 \pm 10/A_V$			X	\$29.00		1081
AD104J	2			500	100	4	0.05	$\pm 15 \pm 15/A_V$	$\pm 10 \pm 10/A_V$			X	\$16.88	Powered via Ext Clk	1819
AD204J	2			750	110	5	0.05	$\pm 15 \pm 15/A_V$	$\pm 10 \pm 10/A_V$			X	\$25.00	Powered via Ext Clk	1081
AD204K	2	$\pm 15$	5	1.5K	100	2	0.025	$\pm 5 \pm 5/A_V$	$\pm 10 \pm 10/A_V$			X	\$32.00	Powered via Ext Clk	1081
AD210J	3	$\pm 15$	50	1.5K to 2.5K	120	20	0.025	$\pm 15 \pm 45/A_V$	$\pm 10 \pm 50/A_V$	X	X		\$44.00	3 Port Isolation	1089
<i><math>A_V = 1</math> to 1000</i>															
AD208A	2			750 to 1.5K	100	4	0.015-0.03	$0.250 \pm 15/A_V$	$1 \pm 1.5 \pm 20/A_V$		X		\$43.56	Powered via ext Clk	1086
													\$24.26		1081

Note: AD2461Y Clock Driver for AD104, AD204 or AD208. See Page 3 of AD202/AD204 Data Sheet for Specs & Pinout.

Note: AD246JY Clock Driver for AD104, AD204 or AD208. See Page 3 of AD202/AD204 Data Sheet for Specs & Pinout.

## Digital Isolators

Model	# Channels	Power Supply		CMV V rms	Transient Immunity kV/ $\mu\text{s}$	Bandwidth MHz	Time Delay ns	Edge-to-Edge Error ns	Lowest Grade Price 100s	Comments	Fax-code
		+V @ mA	+V @ mA								
AD260	5	+5 @ 7 mA		4000	10	20	20	4	\$19.00	With 1 W Transformer	2107
AD261B	5	+5 @ 7 mA		4000	10	20	20	4	\$17.10	AD260 No Transformer	2161
AD261C	5	+5 @ 7 mA		6000	10	20	20	4	\$21.40	AD260 No Transformer	2161



# AMPLIFIERS

## Log Amplifiers

Model	V <sub>ss</sub> Volts	I <sub>ss</sub> mA	-3 dB BW MHz	AC Linearity dB	Limiter Output	Gain Range dB	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD640	±5	15, -60	145	0.5 to 2	Yes	50	20	\$29.95	Laser Trimmed	1208
AD640	±5	15, -60	145	1 to 3	Yes	> 70 dB	NA	\$29.95	Cascading 2 AD640s	1208
AD641	±5	15, -60	250	2	Yes	44	20	\$26.95	58 dB with AD641	1908
AD606	+5	20	50	1.5	Yes	80	16	\$24.95	With Limiters + RSSI	1196
AD8307	+5	7.5	500	0.8	No	-74 to +16	8	\$ 6.18	-78 dB Noise Floor	2098

## LCD Drivers

Model	V <sub>DD</sub> Volts	I <sub>DD</sub> mA	# Drives	E <sub>OS</sub> mV	I <sub>B</sub> mA	V <sub>OUT</sub> High @ 20 mA	V <sub>OUT</sub> Low @ 20 mA	Slew Rate V/μs	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD8509	+3.3 to 5.5	6	9	20	50	4.9 V	0.1 V	7	48	\$TBD	Cap Drive = 1000 pF	2204
AD8511	+3.3 to 5.5	6	11	20	50	4.9 V	0.1 V	7	48	\$TBD	Cap Drive = 1000 pF	2204

□ = New Product since 1997 Short Form Designers' Guide.



# AMPLIFIERS

## Variable Gain Amplifiers: Analog Control

Model	V <sub>SS</sub> Volts	I <sub>DD</sub> mA	I <sub>DD</sub> mA	Range dB	-3 dB BW MHz	Input Spectral Noise nV/√Hz	Input Resis- tance Ohms	Slew Rate V/μs	Accu- racy +25°C %	IP3 @ 10 MHz dBm	1 dB Comp @ 10 MHz dBm	Grade Temp Range 0°C to +70°C +85°C	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD603	±5	17	20	-11 to +31	90	1.4	100	275	±1	NS	NS	A	8	\$ 4.94	Pin Programmable	1195

## Duals

AD600	±5	12.5	14	0 to +40	35	1.4	100	275	1.5	NS	NS	J	16	\$15.00		1193
AD600	±5	12.5	14	0 to +40	35	1.4	100	275	0.5	NS	NS	A	16	\$19.50		1193
AD602	±5	12.5	14	-10 to +30	35	1.4	100	275	1.5	NS	NS	J	16	\$15.00		1193
AD602	±5	12.5	14	-10 to +30	35	1.4	100	275	0.5	NS	NS	A	16	\$19.50		1193
AD604	±5	31	31	0 to +48	40	0.8	300 k	170	0.5	-12.5	+15	J	24	\$14.85	With Power-Down	1959
AD605	+5	23		-14 to +34	40	1.8	175	170	0.5	-1	+15	A	16	\$11.13	Pin Prgm Ranges	1941

## Audio VCAs

See ANALOG/DIGITAL AUDIO section.

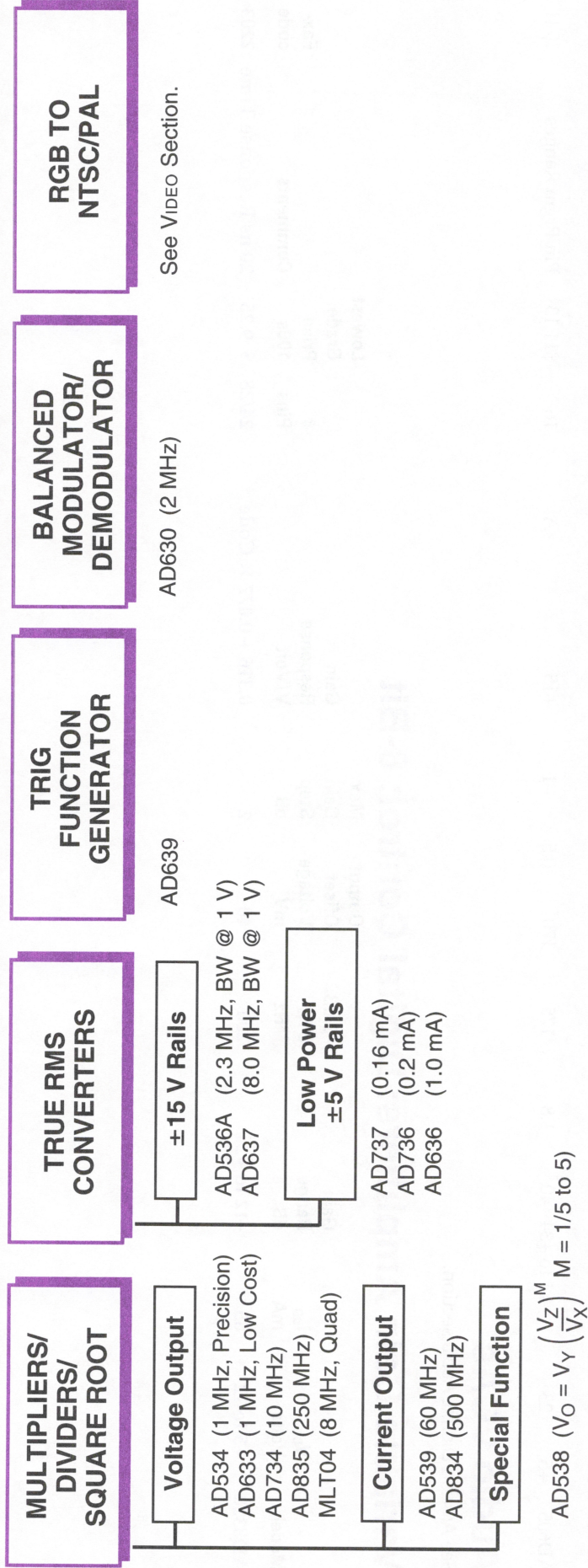
## Variable Gain Amplifiers: Digital Control: 8-Bit

Model	V <sub>DD</sub> Volts	I <sub>DD</sub> mA	Gain Range dB	-3 dB BW MHz	Output Offset Voltage mV	Max Gain Step dB	Gain Response V/Volt	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD8320	+5 to 12	85	-12 to +24	200	40	2	0.316 + 0.077 × Code	24/28	\$ 9.25	20 ns Response Time	2203

□ = New Product since 1997 Short Form Designers' Guide.



# ANALOG COMPUTATION CIRCUITS





## Analog Multipliers/Dividers/Square Root

Model	Transfer Function	Small Signal BW MHz	Slew Rate V/ $\mu$ s	Total Nonlinearity Error @ +25°C			Y Input % FS	Power Supplies Volts	Lowest Grade Price 100s	Comments	Fax-code
				% FS	X Input % FS	Y Input % FS					
AD534	$V_{OUT} = (X_1 - X_2)(Y_1 - Y_2)/10 - (Z_1 + Z_2)$	1	20	$\pm 0.25$ to 1	0.12 to 0.3	0.1	$\pm 15$ @ 6 mA	\$16.95	High Accuracy		1146
AD633	$V_{OUT} = (X_1 - X_2)(Y_1 - Y_2)/10 + Z$	1	20	$\pm 2$	1	0.4	$\pm 15$ @ 6 mA	\$ 3.75	Low Cost, 8 Pins		1204
AD734	$V_{OUT} = (X_1 - X_2)(Y_1 - Y_2)/(U_1 - U_2) - (Z_1 - Z_2)$	8		$\pm 0.4$ to 1	NS	NS	$\pm 15$ @ 12 mA	\$12.65	Wide Bandwidth		1274
AD538	$V_{OUT} = \left(V_Y\right)\left(\frac{V_Z}{V_X}\right)^m$	0.4	1.4	$\pm 1$			$\pm 15$ @ 7 mA	\$27.86	$m = 1/5$ to 5		1149
AD539	$V_{OUT1} = -(V_X)(V_{Y1}); V_{OUT2} = -(V_X)(V_{Y2})$	50		$\pm 2.5$			$\pm 15$ @ 10.2/22.2 mA	\$17.15	Dual Signal Channels		1150
AD834	$V_{OUT} = \left[\frac{(V_X)(V_Y)}{V^2}\right][4 \text{ mA}]$	500		$\pm 2$			$\pm 5$ @ 14/35 mA	\$16.00	Differential Current Output		1414
AD835	$V_{OUT} = (V_X)(V_Y) + V_Z$	200		$\pm 5$	0.7	0.5	$\pm 5$ @ 14/35 mA	\$ 8.95	Single-Ended Voltage Output		1415
MLT04	$V_{OUT} = (V_X)(V_Y)/2.5 \text{ V}$	8	30	$\pm 5$	1	1	$\pm 5$ @ $\pm 240$ mA	\$29.29	Quad		1652



## True RMS Converters

Model	Total Error @ +25°C mV ± % of Reading	Error vs. Crest Factor CF = 3 CF = 7 % Reading	±3 dB Bandwidth kHz 100 mV	Input Level V rms	dB Output	Power Supplies Volts	Lowest Grade Price 100s	Comments	Fax-code
AD536A	$\pm 2.5 \pm 0.2 / 0.5$	0.1	1	450	7 V	Yes	\$ 7.55	Specs are with Internal Trim	1147
AD636	$\pm 0.2 / 0.5 \pm 0.5 / 1.0$	0.2	0.5	900	200 mV	Yes	\$ 6.25	Specs are with Internal Trim	1205
AD637	$\pm 0.5 / 1.0 \pm 0.2 / 0.5$	0.1	1	1000	7 V	Yes	\$10.43	With Shutdown $I_Q = 450 \mu A$	1206
AD736	$\pm 0.3 / 5 \pm 0.3 / 0.5$	0.7	2.5	37	200 mV	No	\$ 3.98		1276
AD737	$\pm 0.2 / 0.4 \pm 0.3 / 0.5$	0.7	2.5	90	200 mV	No	\$ 3.17	With Shutdown $I_Q = 4 \mu A$	1277

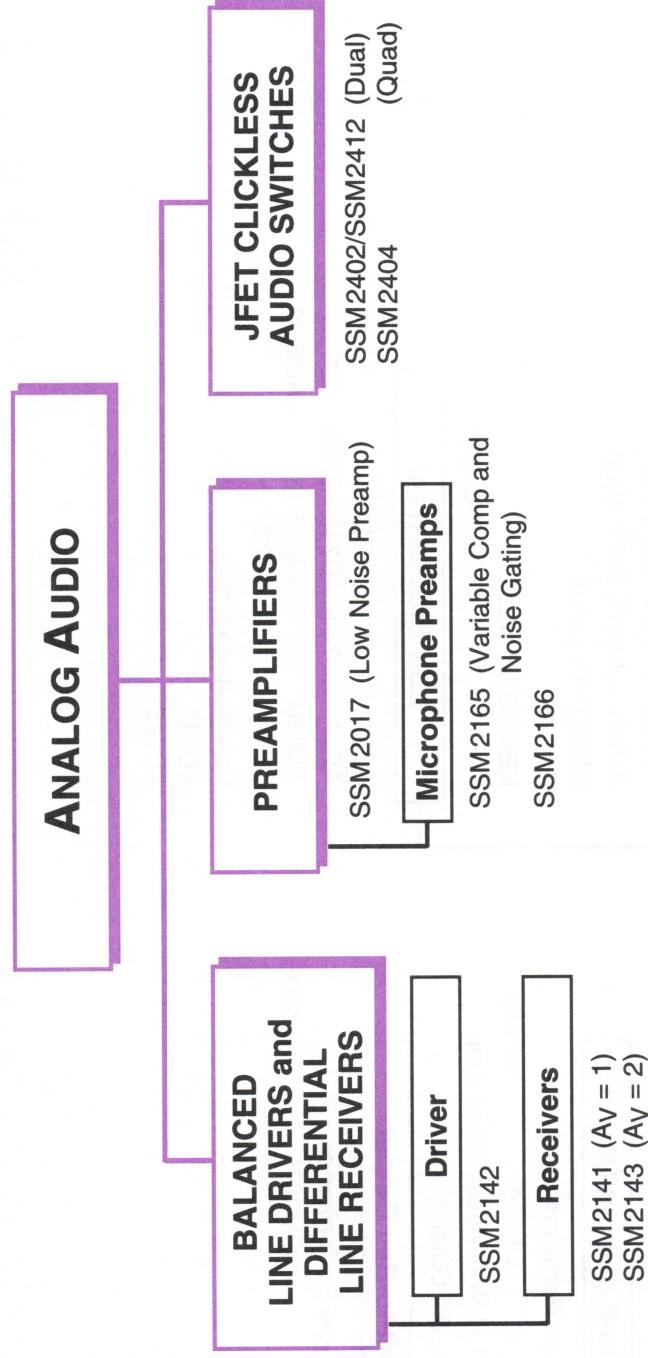
## Trig Function Generator

Model	Transfer Function	Small Signal BW MHz	Slew Rate V/ $\mu s$	Total Nonlinearity Error @ +25°C % FS	X Input % FS	Y Input % FS	Power Supplies Volts	Lowest Grade Price 100s	Comments	Fax-code
AD639	See Data Sheet for Specs.							\$39.83	Trig Function Generator	1207

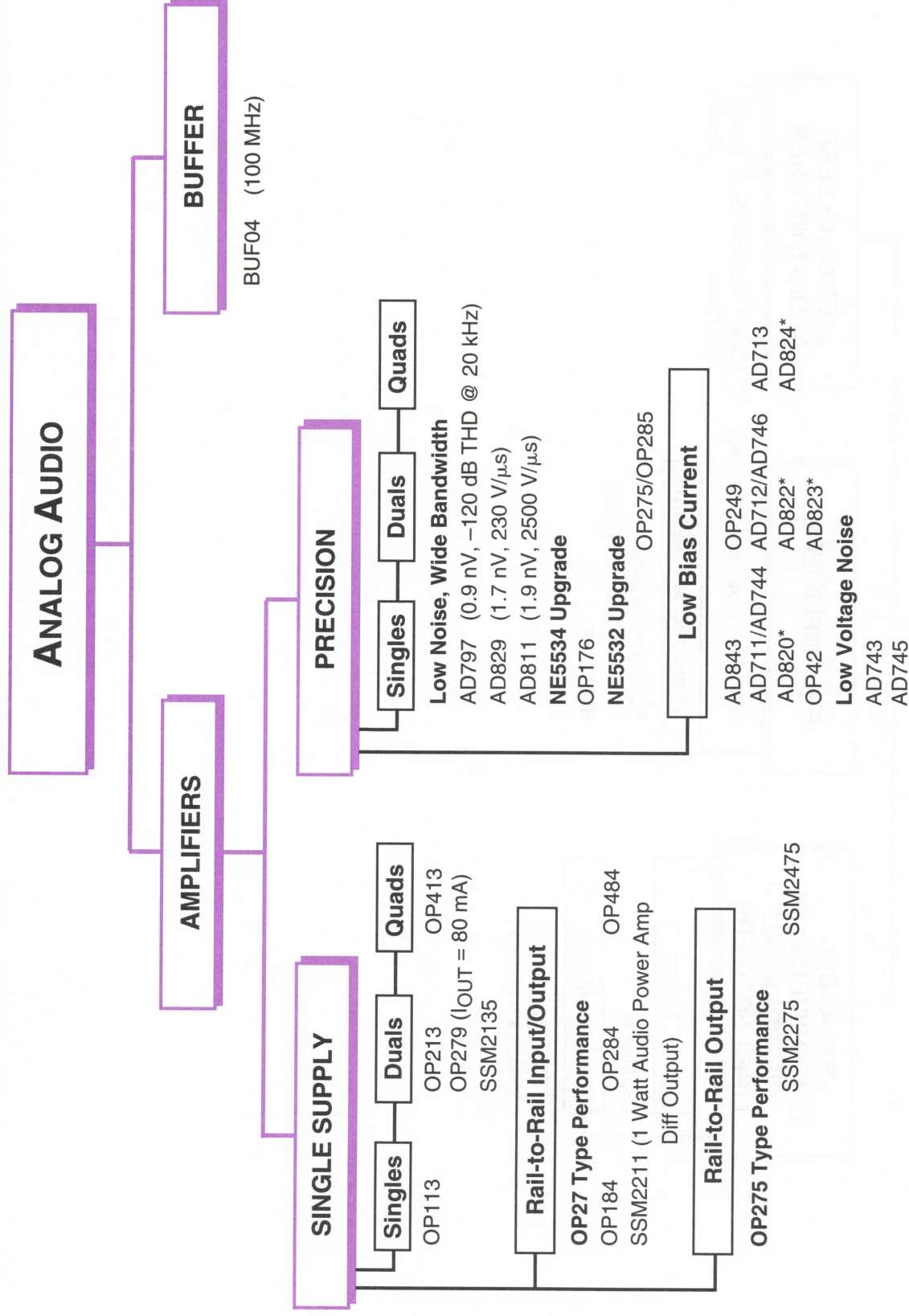
## Balanced Modulator/Demodulator

Model	Unity Gain BW MHz	Gain Error	Output Slew Rate V/ $\mu s$	Channel Separation @ 10 kHz	# Pins	Power Supplies Volts	Lowest Grade Price 100s	Comments	Fax-code
AD630	2	$\pm 1, \pm 2$	45	100 dB	20	$\pm 15 @ 5 \text{ mA}$	\$ 9.85	Recover a Signal from 100 dB Noise	1202



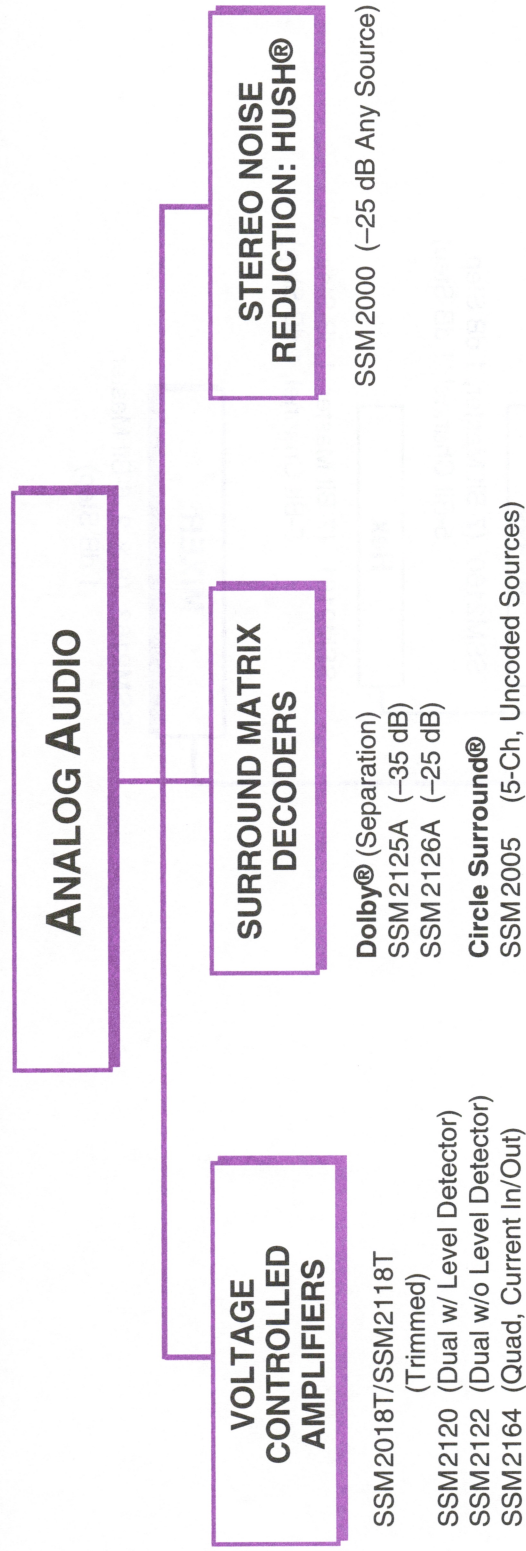






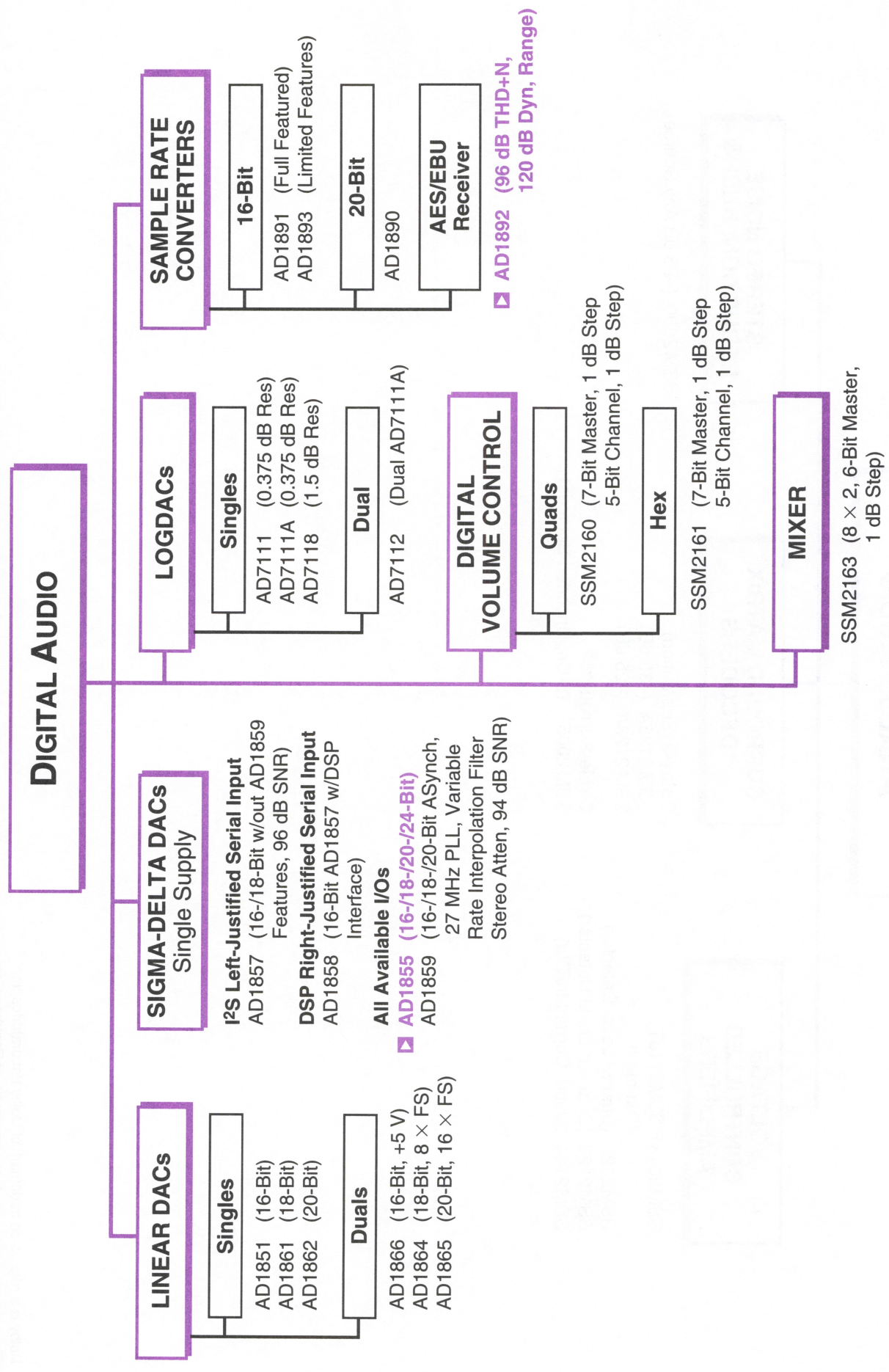
\* Rail-to-Rail Output.





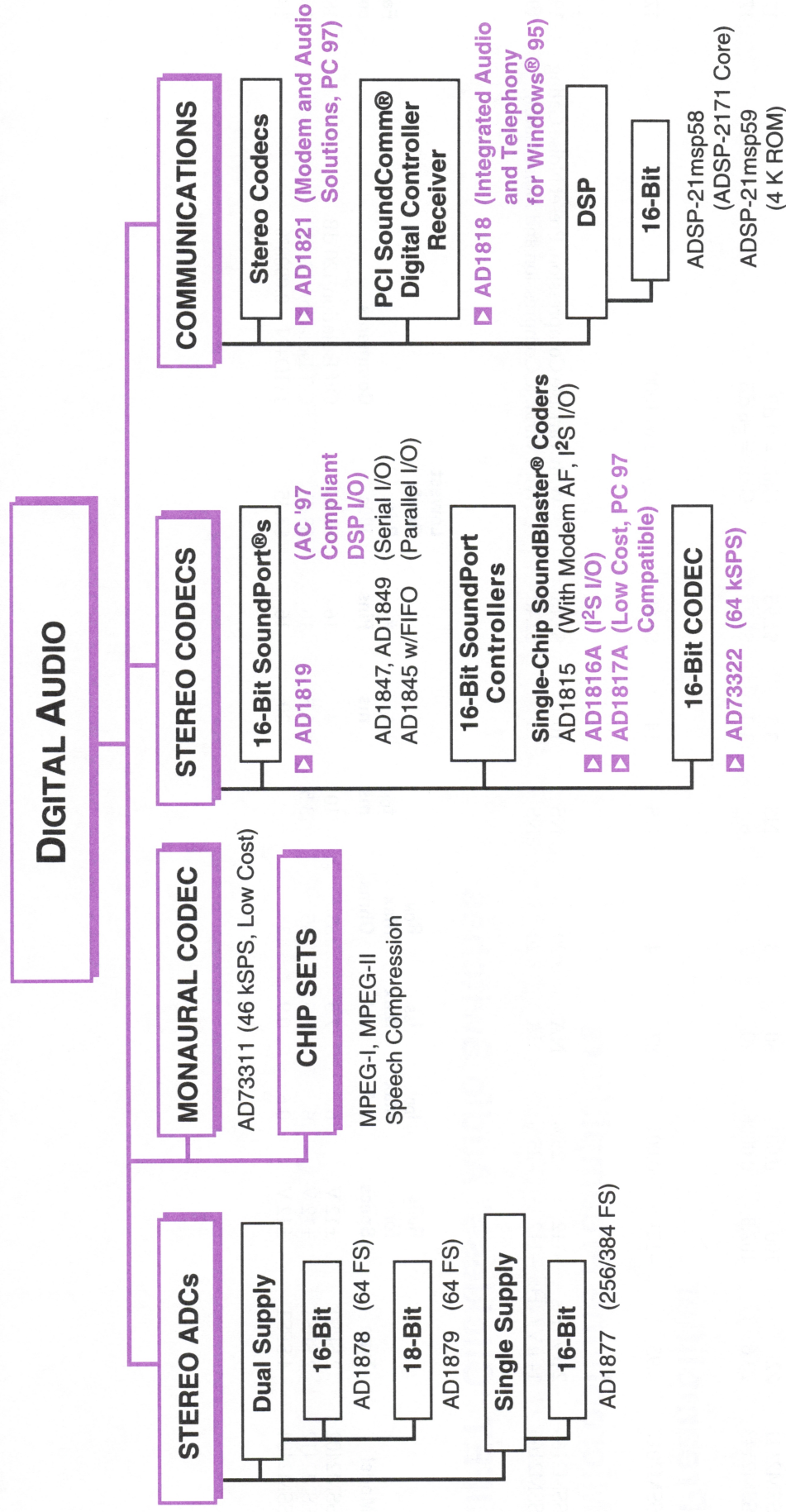
Dolby is a registered trademark of Dolby Laboratories, Inc.  
Circle Surround is a registered trademark of Rocktron Corp.  
HUSH is a registered trademark of Hush Systems.





▶ = New Product since 1997 Short Form Designers' Guide.





SoundPort and SoundComm are registered trademarks of Analog Devices, Inc. All other trademarks are the property of their respective holders.

▶ = New Product since 1997 Short Form Designers' Guide.



Model	e <sub>NOISE</sub> @ 20 kHz μV p-p	SNR dBu	THD+N @ 1 kHz %	CMRR dB	Gain BW MHz	Slew Rate μs	I <sub>Q</sub> mA	Lowest Grade Price 100s	Comments	Fax- code
-------	--	------------	-----------------------	------------	-------------------	--------------------	----------------------	----------------------------------	----------	--------------

## Balanced Line Driver

SSM2142	117	93.4	0.006	NA	NS	NS	7.0	\$2.95	10 V rms into 600 Ohms	1797
---------	-----	------	-------	----	----	----	-----	--------	------------------------	------

## Differential Line Receivers

SSM2141	22	100	0.001	80	3	NS	3.5	\$1.95	Gain = 0 dB	1796
SSM2143	23.6	107.3	0.0006	70	7	6	4.0	\$1.75	Gain = -6 dB	1798

## Preamplifier

SSM2017	0.95	-121	0.001	87	4	NS	14	\$1.80	A <sub>V</sub> = 1 to 1000	1782
---------	------	------	-------	----	---	----	----	--------	----------------------------	------

## Microphone Preamplifiers

SSM2165	2 μV rms	-112	-25%	NA	20	NS	10	\$2.15	With Variable Compression, Preset Noise Gating	1955
SSM2166	14 μV/√Hz	-112	-25%	NA	20	NS	10	\$2.40	With Variable Compression and Noise Gating	1956

## JFET "Clickless" Audio Switches

Model	Type	Rails for Specs	I <sub>DD</sub> Max mA	I <sub>SS</sub> Max mA	R <sub>ON</sub> Max Ohms	t <sub>ON</sub> ms	t <sub>OFF</sub> ms	# Pins	Lowest Grade Price 100s	Comments	Fax- code
SSM2402	2 SPST	±12 V	6	7.5	85	10	4	16	\$3.53	Off Isolation 120 dB	1801
SSM2412	2 SPST	±12 V	6	7.5	85	3.5	1.5	16	\$3.53	Off Isolation 120 dB	1801
SSM2404	4 SPST	±12 V	0.6	0.9	28		30	16	\$3.45	THD+N = 0.0008%	1802



## Operational Amplifiers

Model	$e_{\text{NOISE}}$ @ 20 kHz $\mu\text{V p-p}$	SNR dBu	THD+N @ 1 kHz %	CMRR dB	Gain BW MHz	Slew Rate $\mu\text{s}$	$I_Q$ mA	Lowest Grade Price 100s	Comments	Fax- code
<b>Singles</b>										
OP176	6	NS	0.001	80	10	15	2.5	\$0.96	Butler Input Stage, Low $I_Q$	1673
AD797	7.7	NS	-120 dB	114	8	20	10.5	\$3.95	Ultralow Noise & Distortion	1394
AD744	8	NS	0.0003	78 to 86	8	45	5	\$2.25	Dual Supply $\pm 15\text{ V}$	1281
AD8531	NS	NS	NS	38	3	5	2	\$0.78	Single Supply, $I_{\text{OUT}} = 250\text{ mA}$	1980
SSM2211	TBD	TBD	TBD	65	TBD	TBD	8.5	\$0.99	1 Watt Power Amp	1979
AD711	8	NS	0.0003	76	3	16	3.4	\$0.92	Dual Supply $\pm 15\text{ V}$	1249
<b>Duals</b>										
OP275	7	NS	0.0006	80	9	15	5	\$1.20	Butler Input Stage	1691
OP285	7	NS	0.001	80	9	15	5	\$1.78	Butler Input Stage. Good DC Specs	1694
OP279	22	NS	0.01	70	5	13	3.75	\$1.25	$\pm 5\text{ V}$ , Rail-to-Rail In/Out	1811
SSM2275	7	TBD	TBD	TBD	10	15	10	\$0.90	Rail-to-Rail Output	2102
AD8532	NS	NS	NS	38	3	5	4	\$1.19	Single Supply, $I_{\text{OUT}} = 250\text{ mA}$	1980
OP250	NS	NS	NS	38	3	5	4	\$1.19	Single Supply, $I_{\text{OUT}} = 250\text{ mA}$	1956
AD712	8	NS	0.0003	76	3	16	6.8	\$1.44	Dual Supply $\pm 15\text{ V}$	1253
<b>Quads</b>										
SSM2475	7	TBD	TBD	TBD	10	15	20	\$1.80	Rail-to-Rail Output	2102
AD713	8	NS	0.0003	76	3	16	13.5	\$4.03	Dual Supply $\pm 15\text{ V}$	1254
AD8534	NS	NS	NS	38	3	5	4	\$1.79	Single Supply, $I_{\text{OUT}} = 250\text{ mA}$	1980
OP450	NS	NS	NS	38	3	5	4	\$1.79	Single Supply, $I_{\text{OUT}} = 250\text{ mA}$	1950
<b>Buffer</b>										
BUF04	2	100	0.001	NA	110	3000	8.5	\$3.90	Unity Gain Buffer	1613



## Voltage Controlled Amplifiers

Model	V <sub>SS</sub> Volts	Gain Range dB	-3 dB BW MHz	Input Spectral Noise nV/√Hz	Input Resistance Ω	Slew Rate V/μs	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Singles</b>										
SSM2018T	±5 to ±18	-100 to +40	0.7	-93 dBu	4M	10	16	\$3.75	THD = 0.006%, Voltage Out	1784
SSM2118T	@ 15 mA	-100 to +40	0.7	-93 dBu	4M	10	16	\$3.75	THD = 0.006%, Current Out	1784
<b>Duals</b>										
SSM2120	±5 to ±18	100	0.25	-80 dBu	36K	NS	20	\$4.15	With Two Level Detectors	1788
SSM2122	±5 to ±18	100	0.25	-80 dBu	36K	NS	16	\$4.00	No Level Detectors	1788
<b>Quads</b>										
SSM2024	±15 @ 2 mA	-82 to +2	0.5	NS	R <sub>EXT</sub>	NS	16	\$2.85	THD = 0.3%, Current In/Out	1785
SSM2164	±4 to +18	-94 to +20	0.5	-94 dBu	R <sub>EXT</sub>	0.7	16	\$3.10	THD = 0.1%, Current In/Out	1849

## Surround Matrix Decoders

Model	Power Supply Volts	Channel Separation Center to Left, Right Outputs dB	Channel Separation All Other Combinations dB	THD All Channels %	SNR dB	Auto Balance Capture Range dB	# Pins	Lowest Grade Price 100s	Comments	Fax- code
SSM2125	+12 @ 50 mA	35	25	0.1	-83	±3	48	CF	Must Be a Dolby Licensee to Purchase	1790
SSM2126	+12 @ 50 mA	25	25	0.1	-80	±3.8	48	CF	Must Be a Dolby Licensee to Purchase	1790
SSM2005		(See Data Sheet for Specs. 5:1, 5:2:5-Channel Circle Surround Decoder.)						CF	No License Fee/No Royalty	1965

## Stereo Noise Reduction: HUSH

SSM2000	25 dB Noise Reduction "Single Ended" (Works with any Audio Source) Effectively Decodes Dolby Encoded Sources, 0.02 THD @ 1 kHz	\$6.00	+7 V to +18 V Supply Voltage 100 dB Dynamic Range	1952
---------	---	--------	--	------



## Linear DACs

Model	# Bits	# D/As	Over Sample × FS	Power Supply Requirements +V <sub>CC</sub> Volts	Gain Error % FS	Mid- scale Error max	THD+N @ 1 kHz 0 dB %	SNR typ dB	Channel Separation dB	# Pins	Lowest Grade Price 100s	Comments	Fax- code
-------	--------	--------	---------------------	---	-----------------------	-------------------------------	-------------------------------	------------------	-----------------------------	--------	----------------------------------	----------	--------------

### Singles

AD1851	16	1	16	±5 @ 13 mA	1	±10 mV	0.004	107	NA	16	\$ 6.98		1064
AD1851J	16	1	16	±5 @ 13 mA	1	±10 mV	0.003	110	NA	16	\$ 7.50		1064
AD1861	18	1	16	±5 @ 15 mA	2	±30 mV	0.004	110	NA	16	\$ 6.00		1064
AD1861J	18	1	16	±5 @ 15 mA	2	±30 mV	0.003	110	NA	16	\$ 7.50		1064
AD1862	20	1	16	±5 @ 15 mA	2	±5 µA	0.0019	119	NA	16	\$22.50		1068
AD1862J	20	1	16	±5 to 12 @ 15 mA	2	±5 µA	0.0012	119	NA	16	\$17.20		1068

### Duals

AD1866J	16	2	8	+5 @ 3 mA	3	±30 mV	0.01	95	108	16	\$10.50	Single Supply	1071
AD1864	18	2	8	±5 to 12 @ 15 mA	1	±15 mV	0.004	108	110	24	\$20.45		1069
AD1864J	18	2	8	±5 to 12 @ 15 mA	1	±15 mV	0.003	108	110	24	\$28.95		1069
AD1864K	18	2	8	±5 @ 15 mA	1	±15 mV	0.0017	108	110	24	\$31.95		1069
AD1865	18	2	16	±5 @ 26 mA	1	±4 mV	0.004	110	110	24/28	\$14.85		1070
AD1865J	18	2	16	±5 @ 26 mA	1	±4 mV	0.003	110	110	24/28	\$17.85		1070
AD1865K	18	2	16	±5 @ 26 mA	1	±4 mV	0.002	110	110	24	\$23.17		1070
AD1868N	18	2	8	+5 @ 14 mA	1	±15 mV	0.008	95	108	16	\$11.70	Single Supply	1072
AD1868N-J	18	2	8	+5 @ 14 mA	1	±15 mV	0.008	95	108	16	\$14.60	Single Supply	1072

## Sigma-Delta DACs

Model	# Bits	# D/As	Sample Rate kHz	Power Supply Requirements +V <sub>CC</sub> Volts	Serial I/O	THD+N 1 kHz -dB	SNR dB	Interpolation Filter Sample Rate	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD1857	16	2	48	+5 @ 60 mA	I <sup>2</sup> S	90	96	128	28	\$6.60	Or Left Justified	1988
AD1858	16	2	48	+5 @ 60 mA	DSP	90	96	128	28	\$6.60	Or Right Justified	1988
AD1859	16/18	2	Variable	+5 @ 60 mA	All	90	94	Variable	28	\$7.20	On-Chip Async Master Clock, 27 MHz	1853
AD1855	16/24	2	96	+5 @ 75 mA	All	97	96	64	28	\$6.60	Supports 24-Bit Data	2420

□ = New Product since 1997 Short Form Designers' Guide.



## LOGDACs

Model	# Bits	Power Supply Requirements		Dynamic Range dB	Step Size	Accuracy Range to 0.17% With 0.375 Step	Gain Error Linearity dB	Glitch	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		+V <sub>cc</sub> Volts	+I <sub>cc</sub> +mA									
Singles												
AD7111K	8	5	2	88.5	0.375 dB	30 dB	0.15	100 nV	16	\$16.80	Current Output	1250
AD7111L	8	5	2	88.5	0.375 dB	36 dB	0.1	100 nV	16	\$22.05	Current Output	1250
AD7111A	8	5	1	88.5	0.375 dB	36 dB	0.1	10 nV	16	\$ 4.85	Fast Digital Interface	1250
Duals												
AD7112B	8	5	1	88.5	0.375 dB	36 dB	0.17	10 nV	20	\$ 6.65	Pins with AD7528	1251
AD7112C	8	5	1	88.5	0.375 dB	36 dB	0.1	10 nV	20	\$ 8.50		1251

## Digital Volume Control

Model	e <sub>NOISE</sub> @ 20 kHz BW	Head Room % THD+N	THD+N A <sub>v</sub> - 0	THD+N A <sub>v</sub> - 10 dB	Channel Separation dB	Digital Section		# Pins	Lowest Grade Price 100s	Comments	Fax-code
						Master Range	Channel Range				
SSM2160	-160 dBu	+10	0.008	0.02	80	0 to -60 dB	0 to +20 dB	24	\$ 6.95	6-Channel "Clickless"	1848
SSM2161	-160 dBu	+10	0.008	0.02	80	0 to -60 dB	0 to +20 dB	20	\$ 4.65	Channel "Clickless"	1848

## Mixer

Model	e <sub>NOISE</sub> @ 20 kHz BW	Head Room % THD+N	THD+N A <sub>V</sub> - 0	THD+N A <sub>V</sub> - 10 dB	Channel Separation dB	Digital Section		# Pins	Lowest Grade Price 100s	Comments	Fax- code
						Master Range	Channel Range				
SSM2163	-82 dBu	+10	0.03			(See Data Sheet for Specifications.)			\$ 8.00	8 Input, 2 Output Audio Mixer	1954



## Sample Rate Converters

Model	# Bits	Power		Dynamic Range 20 Hz to 20 kHz dB	THD+N @ 1 kHz FS Input -dB	10 kHz FS Input -dB	F <sub>SAMPLE</sub> Rate kHz	# Pins	Lowest Grade Price 100s	Comments	Fax- code
		V <sub>S</sub> V	I <sub>S</sub> mA								
AD1891	16	+5	40	96	96	95	8 to 56	28	\$20.00		1077
AD1893	16	+3.3	20	96	94	96	8 to 56	28/44	\$12.00	4-Wire Serial with Right Justified	1821
AD1890	18/20	+5	40	120	106	100	8 to 56	28	\$24.00	Short/Long Group Delay Modes	1077
AD1892	20	+3.3	35	120	113	107	8 to 48	28	\$12.00	Digital Audio Receiver	2046

## Stereo A/D Converters

Model	# Bits	Over Sample Rate	Power Supply Requirements		THD+N @ 1 kHz FS Input -dB	Dynamic Range dB	Frequency Response @	# Pins	Lowest Grade Price 100s	Comments	Fax- code
			+V <sub>CC</sub> Volts								
AD1878	16	256	±5 @ 13 mA		95	97	21 kHz 25 kHz 26 kHz	28	\$42.00	Sigma-Delta	1075
AD1877	16	256/384	+5 @ 80 mA		90	92		28	\$ 8.40	Sigma-Delta, Single Rail	1074
AD1879	18	64	±5 @ 13 mA		98	103	0 dB -30 dB -120 dB	28	\$46.00	Sigma-Delta	1075

## Monaural Codec

Model	Description	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD73311	See A/D CONVERTERS section.	20	\$ 4.75	Input and Output PGA 36 dB	2083



## Stereo Codecs

Model	Description	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>16-Bit SoundPorts®</b>					
AD1847	16-Bit, Serial Port, Sample Rate 5.5 kHz to 49 kHz	44	\$10.50	Multiple Stereo Inputs	1061
AD1849	16-Bit, Serial Port, Sample Rate 5.5 kHz to 49 kHz	44	\$22.20	CS4215 Compatible	1063
AD1819	16-Bit, Serial Port, Sample Rate 7.0 kHz to 48 kHz		\$ TBD	AC '97 Compatible	2127
<b>16-Bit SoundPort Controllers: SoundBlaster Codecs</b>					
AD1816A	16-Bit, SB Pro Compatible, ISA Audio Controller	100	\$ 8.75	PC 97 Logo Compatible	2029
AD1817A	16-Bit, SB Pro ISA Audio Controller, ACPI	100	\$15.00	PC Logo Compatible	2176
AD1821	16-Bit, MODIO™ Sound/Communications HSP Codec	100	CF	PC 97 + MMX Certified	2252
<b>PCI SoundComm® Digital Controller</b>					
AD1818	DSP Core ADSP-21cps01, Supports 64 Voice with Synth, 3.0 Sound Localization, AC-3 Decompression, V.34, V.17, V.70 DSVD, V.80, G.72x	128	\$ TBD	Direct Sound and Telephony	2181
<b>16-Bit Codec</b>					
AD73322	See A/D CONVERTERS section.	28	\$ TBD	Input and Output PGA 36 dB	2446

SoundPort and SoundComm are registered trademarks of Analog Devices, Inc.  
 MODIO is a trademark of Smartlink Ltd.  
 □ = New Product since 1997 Short Form Designers' Guide.



## Communications

Model	Description	# Pins	Lowest Grade Price 100s	Comments	Fax-code
-------	-------------	--------	-------------------------	----------	----------

### Stereo Codecs

AD1845	16-Bit, Parallel Port, ISA and EISA Bus Compatible	68/100	\$10.00	CS4248/4231 Compatible	1900
AD1821	16-Bit, MODIO SoundComm HSP Codec Audio Solution	100	CF	PC 97 Logo Compatible	2252

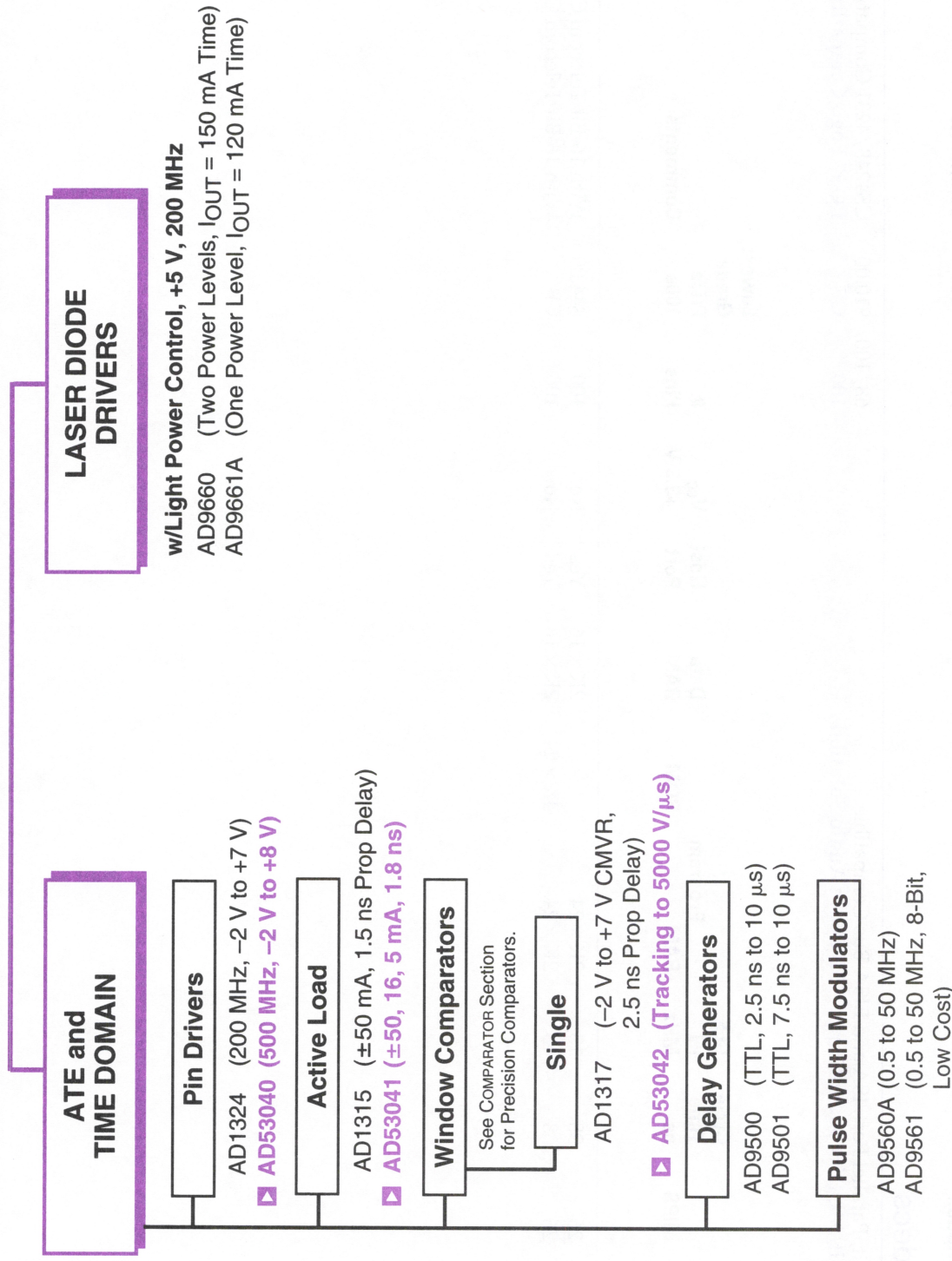
Model	MIPS	Cycle Time ns	CLK IN MHz	Program RAM	ROM	Data RAM	Host Port	V <sub>cc</sub> +3.3 V	# Pins	Lowest Grade Price 100s	Comments	Fax-code
-------	------	---------------	------------	-------------	-----	----------	-----------	------------------------	--------	-------------------------	----------	----------

### DSP

ADSP-21msp58	26	38	13	2K × 24		2K × 16	Yes	No	100	\$44.00	With 16-Bit Telecom Codec	1901
ADSP-21msp59	26	38	13	2K × 24	4K × 24	2K × 16	Yes	No	100	CF	With 16-Bit Telecom Codec	1901



# ATE, TIME DOMAIN & LASER DIODE DRIVERS





# ATE, TIME DOMAIN & LASER DIODE DRIVERS

## Pin Drivers

Model	+V <sub>s</sub> V	-V <sub>s</sub> V	Power +I <sub>s</sub> mA	-I <sub>s</sub> mA	Prop Delay ns	Rise & Fall Time ns	Output Range V	I <sub>OUT</sub> mA	Linearity % V <sub>SET</sub>	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD1324	+10	-5.2	100	100	1.5	0.4 to 6.5	-2 to +7	30	0.2	16	\$85.00	With Inhibit Mode 1.6 ns	1046
AD53040	+12	-7.0	75	75	1.5	0.8 to 2.4	-3 to +8	160	0.3 ± 5 mV	20	\$34.20	100 ps Edge Matching	2170

## Active Load

Model	+V <sub>s</sub> V	-V <sub>s</sub> V	Power +I <sub>s</sub> mA	-I <sub>s</sub> mA	Prop Delay ns	Sink mA	I <sub>OUT</sub> Source mA	Linear- ity % FS	Gain Error % FS	Offset Error mA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD1315	+10	-5.2	+100	-100	1.5 to 3	0 to -50	0 to +50	0.12	2	±1	16	\$40.00	Voltage PRGM Current Source	1044
AD53041	+10.5	-5.2	+160	-160	1 to 1.8	-50, 16, 5	+50, 16, 5	0.02	1 to 8	±1	20	\$30.40	Programmable I <sub>OUT</sub> , 50, 16, 5 mA	2171

## Window Comparators

Model	+V <sub>s</sub> V	-V <sub>s</sub> V	Power +I <sub>s</sub> mA	-I <sub>s</sub> mA	CMV Range V	CMRR dB	Prop Delay ms	Dispersion ± ps	E <sub>OS</sub> mV	I <sub>B</sub> μA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD1317	+10	-5.2	+70	-100	-2 to +7	70	2.5	400 to 600	±10	33	16	\$25.00	ECL Window Comparator	1045
AD53042	+10	-5.2	+65	-85	-2 to +7	NS	2	100 to 175	±10	20	28	\$25.00	Tracking to 5000 V/μsec	2451



# ATE, TIME DOMAIN & LASER DIODE DRIVERS

## Delay Generators

Model	Power		Prop Delay ns	Max Trigger Rate MHz	Rise & Fall Time ns	INL Bits	DNL Bits	Min Pulse Width ns		Max Pulse Width ms		# Pins	Lowest Grade Price 100s	Comments	Fax-code
	+Vs V	-Vs V	+Is mA	-Is mA											
AD9500	+5	-5	24	37	7.4	30	2	±1/2	±1	2.5	10	24/28	\$16.50	With Separate Trigger and Reset Inputs	1460
AD9501	+5	-	83	-	30	30	3.5	±1/2	±1	7.5	10	20	\$ 8.60	18 ps Resolution	1461

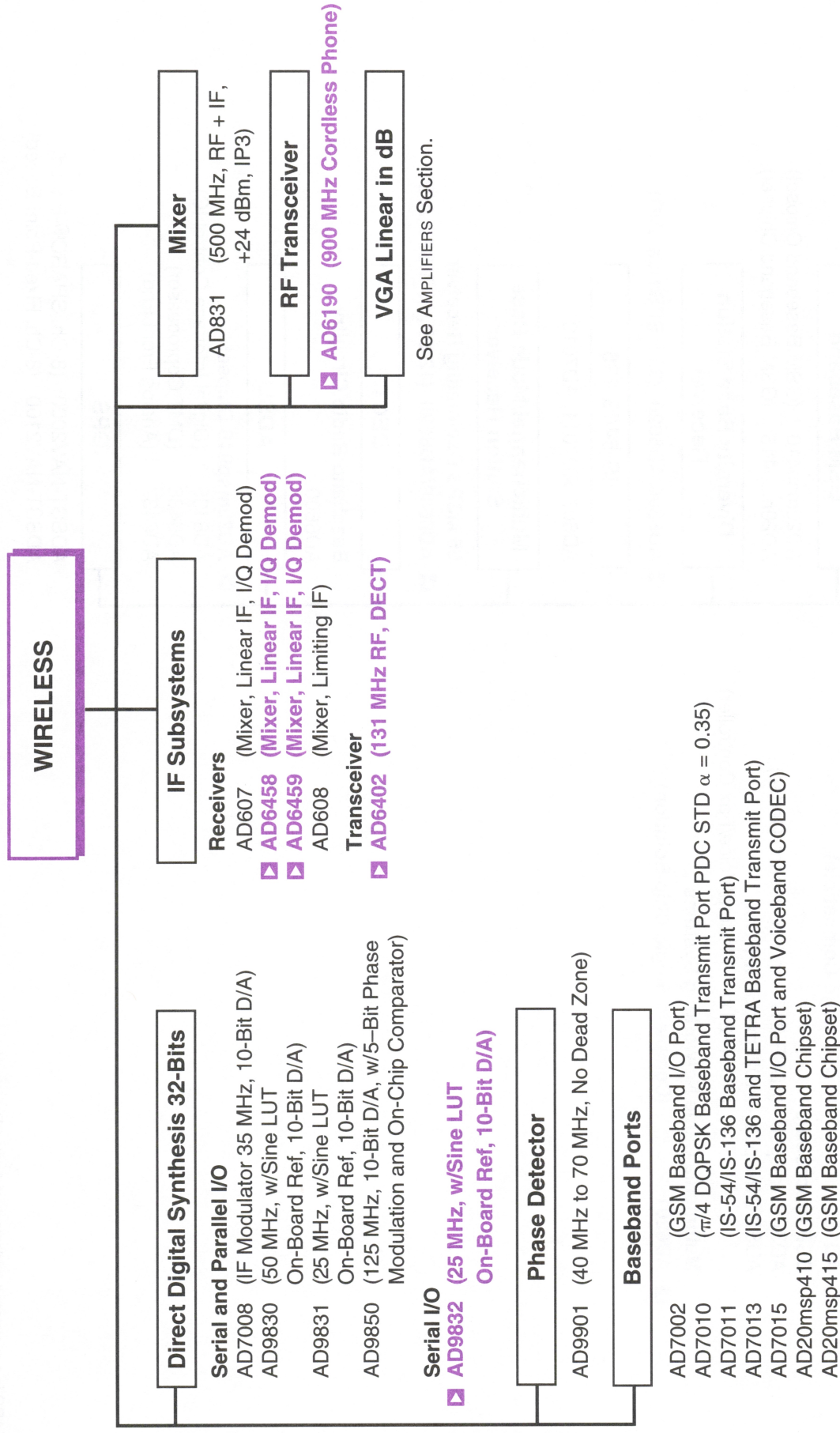
## Pulse Width Modulators

Model	# Bits	Power		Trigger Rate for Specs MHz	Max MHz	Prop Delay ns	Rise & Fall Time ns	Full Scale	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Vs Volts	Is mA									
AD9560	8	+5	87	20	40	44	3	90% Clock	28	\$16.10	With Autocalibration, Programmable Edge Placement	1894
AD9561	8	+5	170	20	60	28	3	100%	28	\$ 8.70	Programmable Edge Placement	2027

## Laser Diode Drivers

Model	# Bits	Power		Trigger Rate for Specs MHz	Max MHz	Prop Delay ns	Rise & Fall Time ns	Full Scale	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Vs Volts	Is mA									
AD9660	N/A	+5	150	200	200	1.6	1.7/2.8	180 mA	28	CF	Dual Feedback Loops for Bias/Write, Low Cost	1906
AD9661A	N/A	+5	95	100	200	2.9-5	2/2	120	28	\$ 3.15	With Light Power Control	1971





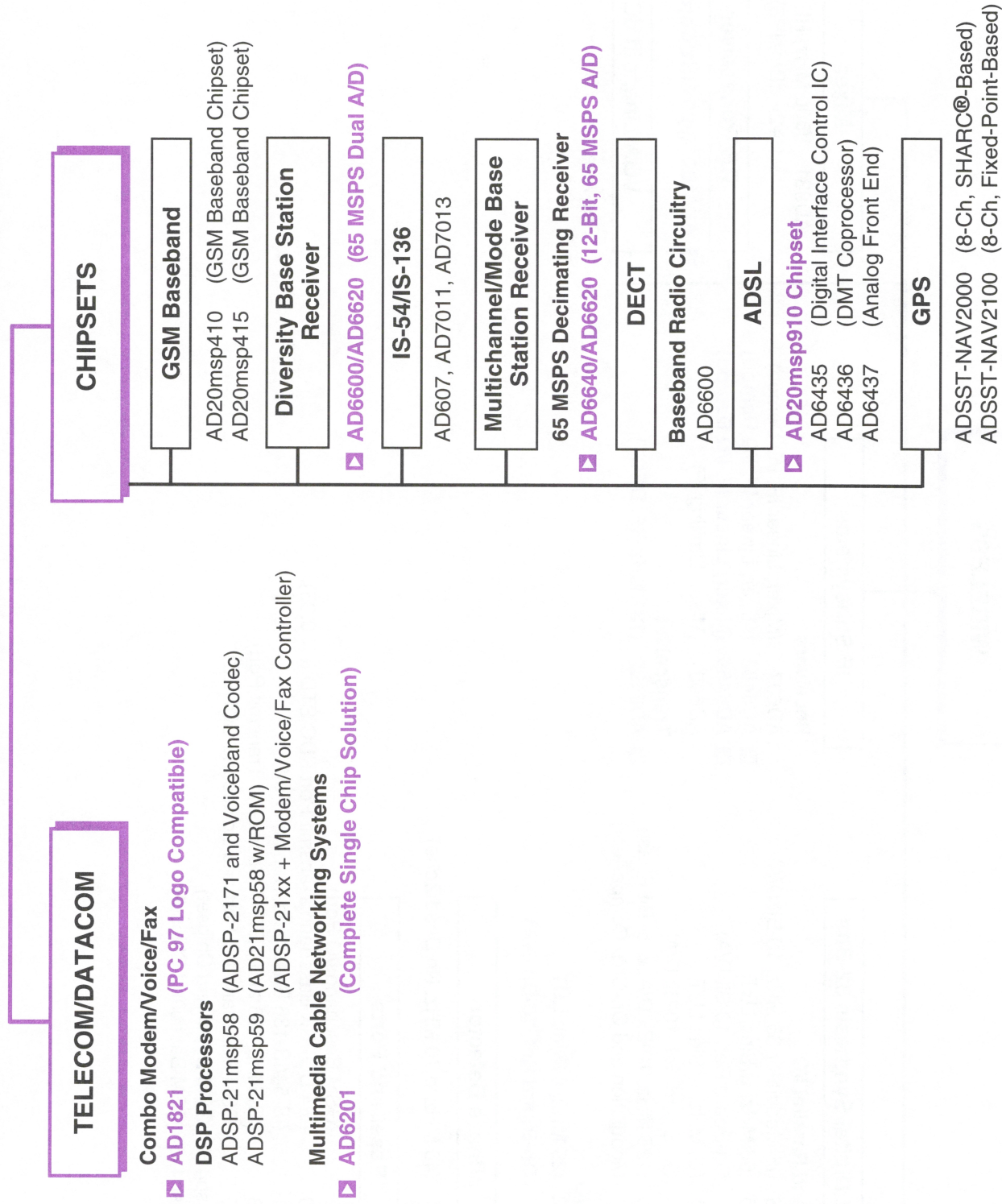
## Phase Detector

AD9901 (40 MHz to 70 MHz, No Dead Zone)

## Baseband Ports

AD7002 (GSM Baseband I/O Port)  
 AD7010 ( $\pi/4$  DQPSK Baseband Transmit Port PDC STD  $\alpha = 0.35$ )  
 AD7011 (IS-54/IS-136 Baseband Transmit Port)  
 AD7013 (IS-54/IS-136 and TETRA Baseband Transmit Port)  
 AD7015 (GSM Baseband I/O Port and Voiceband CODEC)  
 AD20msp410 (GSM Baseband Chipset)  
 AD20msp415 (GSM Baseband Chipset)





SHARC is a registered trademark of Analog Devices, Inc.  
 ▣ = New Product since 1997 Short Form Designers' Guide.



## Wireless

### Direct Digital Synthesis 32 Bits

Model	# Bits	Power Supply Volts	I <sub>out</sub> mA	THD -dB	SNR +dB	SFDR Wideband -dB	Update Rate MHz	f <sub>out</sub> Max MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD7008-20	10	+5	160	55	50	55	20	10	44	\$22.50	I/Q Amp Demodulator	1240
AD9831	10	+3	12	55	50	50	25	7	48	\$ 7.35	Single-Ended Output	1994
AD7008-50	10	+5	160	53	50	NS	50	25	44	\$27.00	NS SFDR = 70 dB	1240
AD9830	10	+5	15	55	50	50	50	15	48	\$11.70	4-Phase Registers	1993
AD9850	10	+5	76	NS	NS	46	125	35	28	\$14.55	With Fast Comparator	1990
AD9832	10	+5	15	53	50	50	25	7	16	\$ 5.88	Serial I/O	2210

### Phase Detector

Model	Power +Vs V	-Is V	+Is mA	-Is mA	Linear Phase Detection Range @ 40 kHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD9901	+5	-5	54	52	360° 320° 270°	16/20	\$3.85	Linear Phase Detector/Frequency Discriminator	1482

### GSM Baseband I/O Port

Model	Power Vs V	Is mA	Transmit Dual 10-Bit Is Spurious Power	Update Rate	Frequency Response	Word Rate MSPS	Update Rate kSPS	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD7002	+5	30	-3 dBc to 63 dBc 100 kHz	4.33 kHz 400 kHz	-0.05 dBc @ 100 kHz	13 @ 200 kHz	270/541	44	\$15.50	With Power-Down, 3 Aux D/As Receive, Dual 12-Bit	1239

### PDC $\pi/4$ Baseband Transmit Port

AD7010	+5	8	-25 dBc to 55 dBc 25 kHz	NS 50 kHz	NA	NA	NA	24	\$10.00	Japanese Cell Phone	1241
--------	----	---	--------------------------	-----------	----	----	----	----	---------	---------------------	------

### IS-54/IS-136 Baseband Transmit Port

AD7011	+5	8	-35 dBc to 70 dBc 30 kHz	160 kHz 60 kHz	NA	NA	NA	24	\$ 5.34		1242
--------	----	---	--------------------------	----------------	----	----	----	----	---------	--	------

### IS-54/IS-136 Baseband Receive Ports

AD7013*	+5	10.5	NA	NA	-3 dBc @ 11.4 kHz	-24 dB @ 15 kHz	1.55	38/97	28	\$10.00	Tetra	1243
AD7015	+3	See D/S	Complete Baseband & Voiceband Codec GSM/DCS1800	80	\$21.00	GSM Also						1921
AD20msp410	NA	NA	GSM Baseband Processing Chip Set, ADSP-2171 & AD7015 & PLP01	NA	CF	1st Generation Chip Set						1920
AD20msp415	NA	NA	GSM Baseband Processing Chip Set	NA	CF	2nd Generation Chip Set						2041

\*AD7013 15-Bit Resolution.

■ = New Product since 1997 Short Form Designers' Guide.



## Wireless

### IF Receivers

Model	RF & LO Range MHz	Mixer Section IP3 dBm	1 dB Comp dBm	IF Section @ 10.7 MHz Gain dB	Demod Section PLL Input BW	I/Q Demod Section Output BW	RSSI Section dB	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD607	500	-5	-15	75 dB	0.4 to 12 MHz	0.5 MHz	90	20	\$ 7.95	Linear IF Arch	1824
AD608	500	-5	-15	110 dB	NA	NA	-75 to +5	16	\$ 6.25	Limiting IF Arch	1825
AD6459	500	-0	-11	52 dB	5 to 40 MHz	2 MHz	75	20	\$ 7.95	Linear IF Arch	2079

### RF & IF Transceivers

Model	RF & LO Range MHz	Mixer Section IP3 dBm	1 dB Comp dBm	IF Section @ 10.7 MHz Gain dB	Demod Section PLL Input BW	I/Q Demod Section Output BW	RSSI Section dB	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD6432	350	N/S	-15	65 dB	50 MHz	3 MHz	NA	44	\$25.00	With TX Modulator	2113
AD6190	(Single Chip Radio, 902-928 MHz. Use faxcode for two page information sheet.)										2231

### Mixers

Model	RF & LO Range MHz	Mixer Section IP3 dBm	1 dB Comp dBm	IF Section @ 10.7 MHz Gain dB	Demod Section PLL Input BW	I/Q Demod Section Output BW	RSSI Section -dBm	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD831	500	+24	+10				NA	20	\$ 8.10	Doubly Balanced Mixer	1413
AD6402	131	(See data sheet for specifications.)									2195

### Chipsets

Model	Description	Lowest Grade Price	Fax-code
IS-54/IS-136 AD20msp410	IF Baseband Conversion, AD7011 + AD7013 + AD607	CF	2230
AD6400	GSM Baseband Processing Chipset: ALG (Algorithm Signal Processor = ASIC Variant of ADSP-2176 and ADSP-2178, ADPLP01, Physical Layer Processor = ASIC + H8300H $\mu$ Controller, BBC, Baseband Converter = AD53/009-9 (AD7115))	CF	1920
AD6600/AD6620	Baseband and Radio Circuitry for DECT: AD7011, AD7013, AD607	CF	2224
AD6640/AD6620	Diversity Base Station Receiver, for new Air Standards	CF	2229
AD20msp910	Multichannel/Multimode Base Station Receiver, for New Air Standards, New Product since Fall of 1996	CF	2228
	ADSL: AD6435 Digital Interface, AD6436 DMT Coprocessor, AD6437 Analog Front End		2177

VGA LINEAR in dB, see AMPLIFIER section.

■ = New Product since 1997 Short Form Designers' Guide.

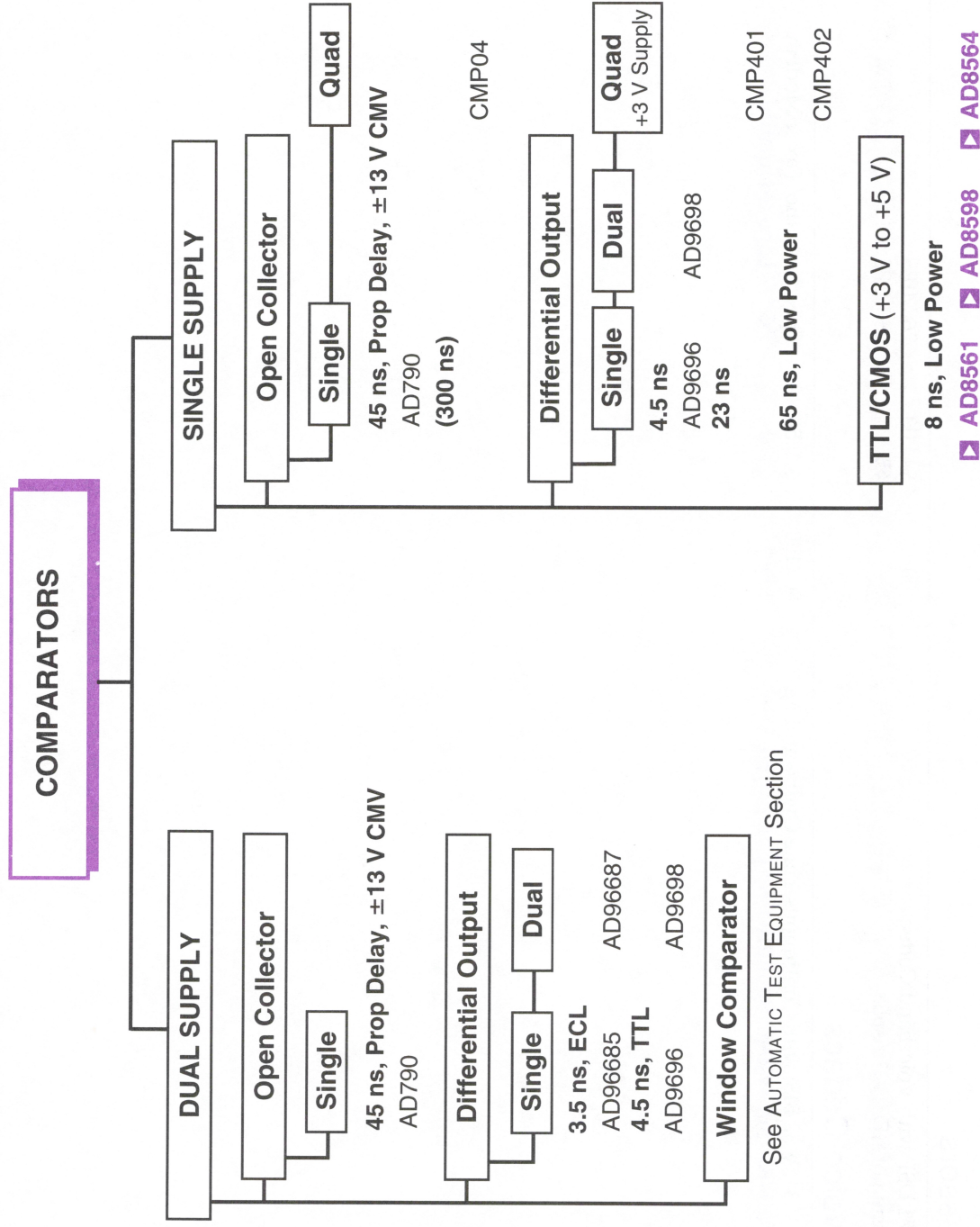


## Telecom/Datacom

Model	Description	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>Mixed Signal Processors</b>					
ADSP-21msp58	ADSP-2171 DSP with Voiceband Codec	100	\$44.00	26 MIPS	1901
ADSP-21msp59	ROM Version of ADSP-21msp58		CF	26 MIPS, with 4K x 24 ROM	1901
<b>Communication &amp; Voice Codes</b>					
AD1843	Supports V.34, V.32 BIS, with Continuous Time Oversampling	80/100	\$ 9.50	Speech, Audio, Fax & Modem	1902
AD1821	16-Bit Audio/Fax Subsystem, SoundBlaster Compatible	100	CF	PC '97 Logo Compatible	2252



# COMPARATORS





# COMPARATORS

Model	#	Comp	Output Stage Type	Power Supply Requirements +V <sub>cc</sub> Volts	Eos @ +25°C ± mV	Latch Enable Pin	Prop Delay +25°C ns	T <sub>MAX</sub> ns	# Pins	Lowest Grade Price 100s	Comments	Fax-code
-------	---	------	-------------------	---	------------------------	------------------	------------------------	---------------------	--------	-------------------------	----------	----------

## Dual Supply: Singles

AD790	1		Open Collector	±15 @ 10/5 mA	0.25 to 1	Yes	45	50	8	\$2.95	Large CMV Range	1386
AD9696	1		DIFF/TTL	±5 @ 32/4 mA	2	Yes	4.5	7	8	\$2.31		1472
AD96685	1		DIFF/ECL	±5 @ 9/18 mA	2	Yes	3.5	NS	16	\$2.85		1470

## Dual Supply: Duals

AD9698	2		DIFF/TTL	±5 @ 64/8 mA	2	Yes	4.5	7	8	\$3.85		1472
AD96687	2		DIFF/ECL	±5 @ 18/36 mA	2	Yes	3.5	NS	16	\$3.38		1470

## Dual Supply: Quads

AD8564	4		TTL +3 V or +5 V	±5 @ 18.4 mA	3	Yes	8	10	16	\$4.10	Low Power, Fast	2097
--------	---	--	------------------	--------------	---	-----	---	----	----	--------	-----------------	------

## Single Supply: Singles

AD790	1		Open Collector	+15 @ 12 mA	0.6	Yes	45	50	8	\$2.95	Precision, with Internal Hysteresis	1386
AD8561	1		TTL +3 V or +5 V	+3 @ 4.1 mA	3	Yes	8	10	8	\$1.96	Low Power, Fast	2097
AD9696	1		DIFF/TTL	+5 @ 32 mA	2	Yes	4.5	7	8	\$2.31		1472

## Single Supply: Duals

AD9698	2		DIFF/TTL	+5 @ 64 mA	2	Yes	4.5	7	8	\$3.85		1472
--------	---	--	----------	------------	---	-----	-----	---	---	--------	--	------

## Single Supply: Duals

AD8564	4		TTL +3 V or +5 V	+3 @ 16.4 mA	3	Yes	8	10	8	\$4.10	Low Power, Fast	2097
CMP04	4		Open Collector	+15 @ 2 mA	1	No	300	NS	14	\$5.20		1616
CMP401*	4		TTL +3 V or +5 V	+5 @ 7.5 mA	3	No	23	27	16	\$3.39	For Recovering Digital Signals	1872
CMP402*	4		TTL +3 V or +5 V	+5 @ 12.4 mA	3	No	40	45	16	\$3.39	For Recovering Digital Signals	1872

\*Also specified @ ±5 V rails.

▣ = New Product since 1997 Short Form Designers' Guide.



# COMPARATORS

## Nonsynchronous Operation

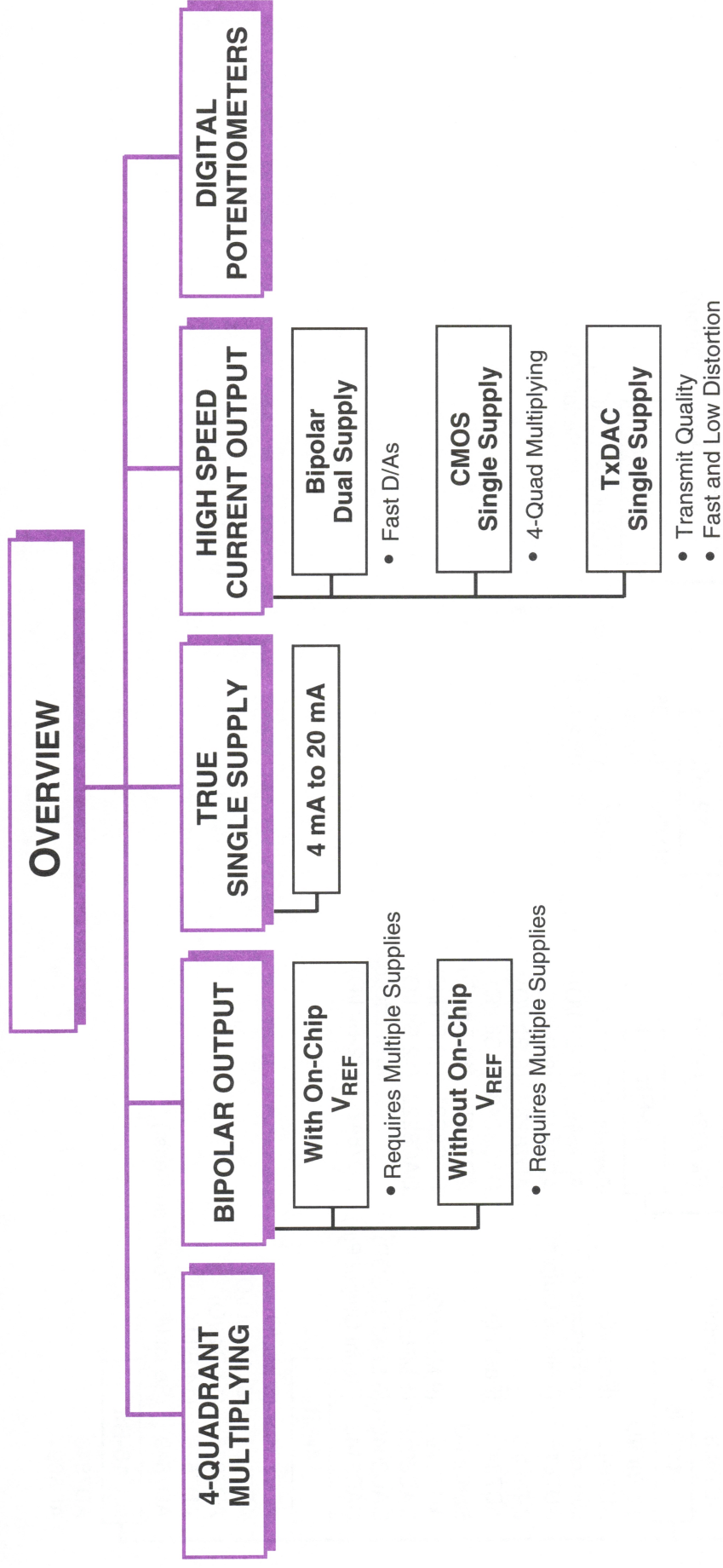
Model	Power Supply Requirements			Input Voltage Range Volts	Full-Scale Frequency kHz	Accuracy		Voltage Reference Volts Int	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	+V <sub>CC</sub> Volts	+I <sub>CC</sub> mA	-V <sub>EE</sub> Volts	-I <sub>EE</sub> mA									
AD537J	+15	2.5	-15	2.5	±11	150	0.15%/10 kHz	0.25%/100 kHz	+1	Open Col	10/14	With 1 mV/K Temp Sensor	1148
AD537K	+15	2.5	-15	2.5	±11	150	0.07%/10 kHz	0.1%/100 kHz	+1	Open Col			
ADVFC32	+15	8	-15	8	0 to 10	500	0.05%/100 kHz	0.2%/500 kHz	NA	Open Col	10/14	Pin for Pin BB VFC32	1605
AD650J	+15	8	-15	8	0 to 11	1000	0.02%/100 kHz	ns @ 1 MHz	NA	Open Col	14/20	100 kHz F/V Mode	1214
AD650K	+15	8	-15	8	0 to 11	1000	0.02%/100 kHz	0.1%/1 MHz	NA	Open Col			
AD654	+5	2.5			0 to 1	500	0.1%/250 kHz	0.4%/500 kHz	NA	Open C&E	8	+5 V, ±5 V or ±15 V Rails	1216

## Synchronous Operation

Model	Power Supply Requirements			Input Voltage Range Volts	Full-Scale Frequency kHz	f <sub>CLK</sub> Input MHz	Accuracy		Voltage Reference Volts Int/Ext	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	+V <sub>CC</sub> Volts	+I <sub>CC</sub> mA	-V <sub>EE</sub> Volts	-I <sub>EE</sub> mA										
AD652J	+15	15	-15	15	±10		F <sub>CLK</sub> /2	0.1 to 2	+5 Int	Open C&E	16/20	\$10.06	Synchronous, F/V = 100 kHz	1215
AD652K	+15	15	-15	15	±10		F <sub>CLK</sub> /2	0.1 to 2	+5 Int	Open C&E		\$13.11		
AD7541	+5	8			0 to V <sub>REF</sub>		F <sub>CLK</sub> /2	0.1 to 2	+2.5 Ext	TTL	8	\$TBD	Single Channel Input	2187
AD7542	+5	8			0 to V <sub>REF</sub>		F <sub>CLK</sub> /2	0.1 to 2	+2.5 Ext	TTL	16	\$TBD	4-Channel Input	2188

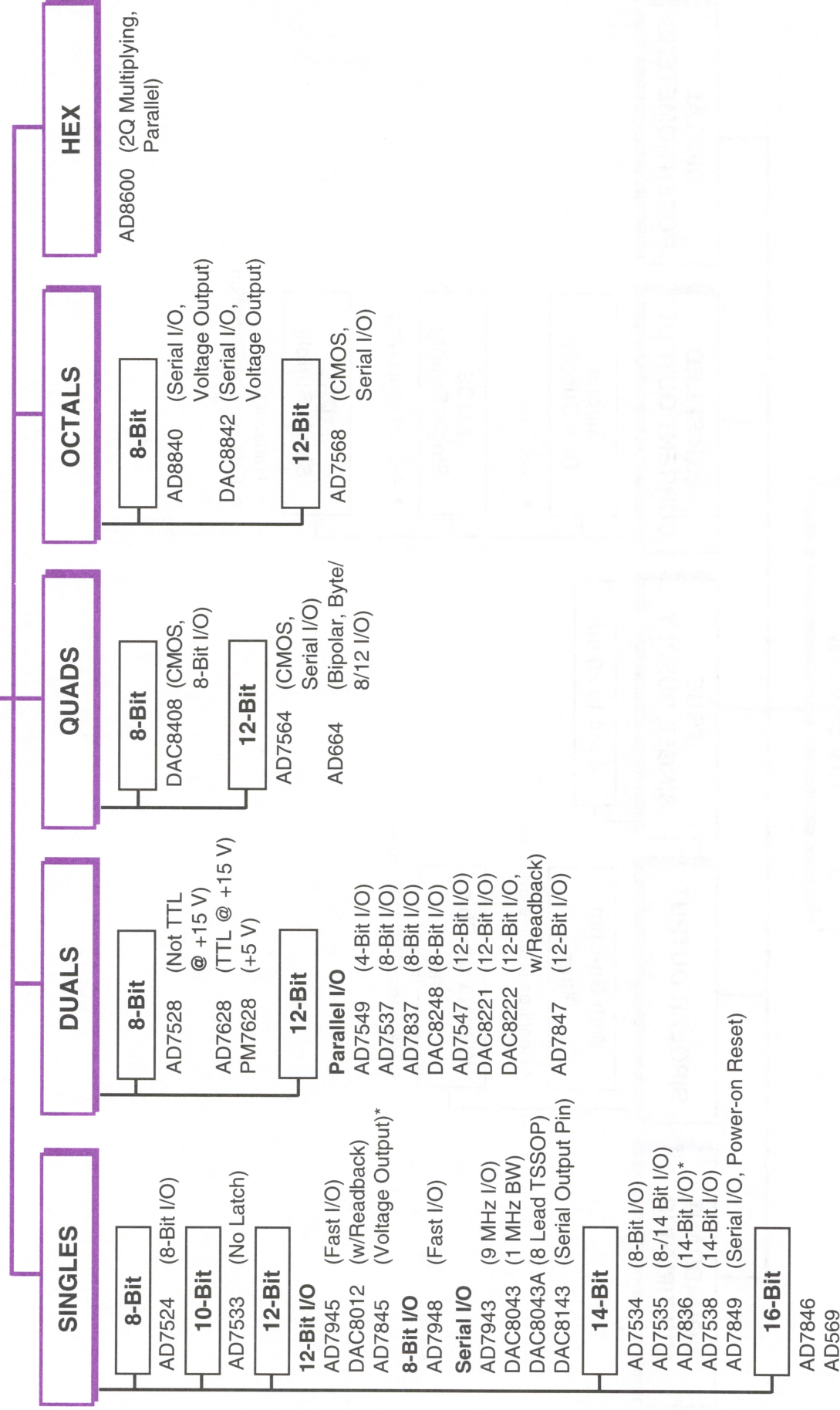
■ = New Product since 1997 Short Form Designers' Guide.





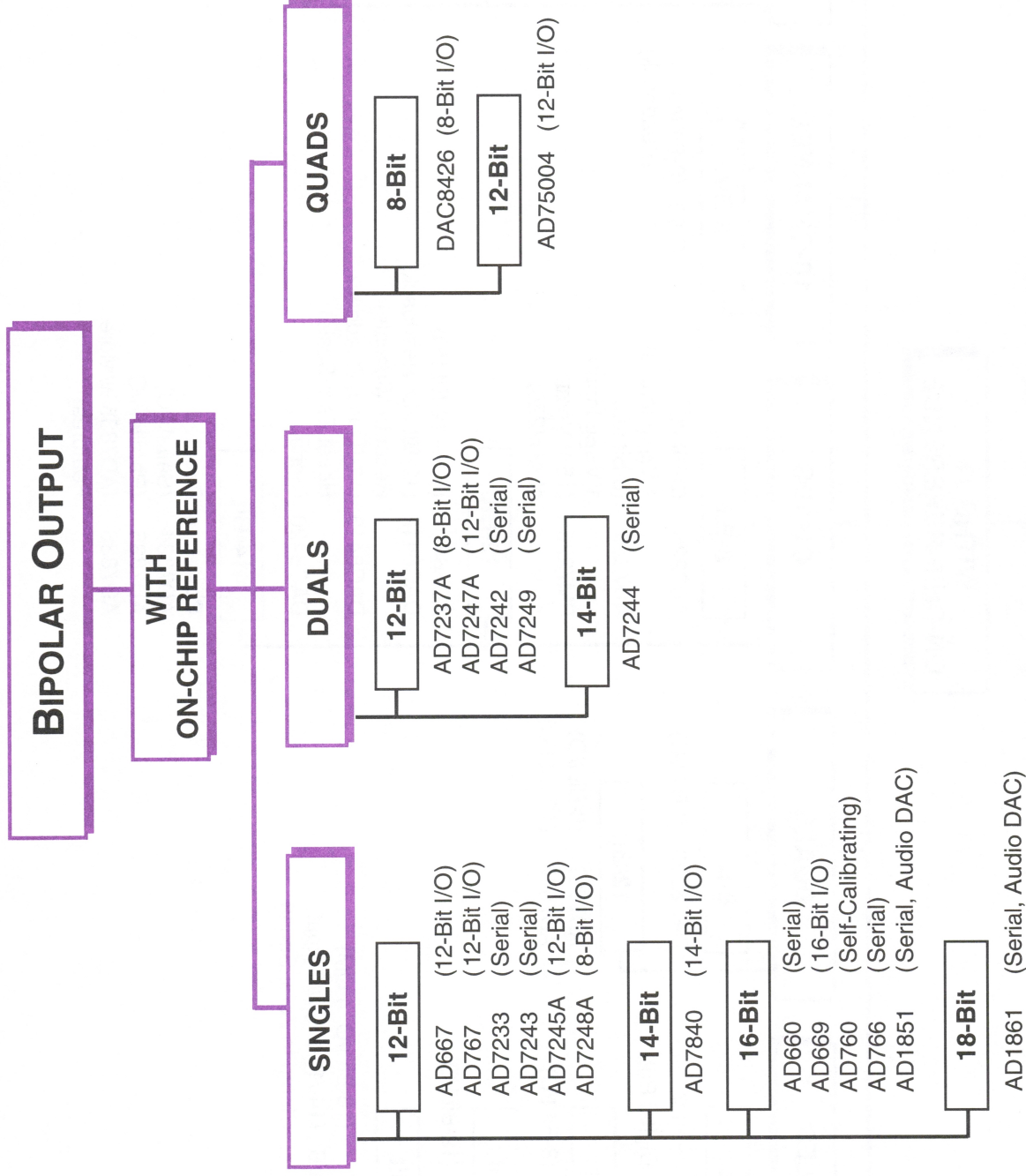


## 4-QUADRANT MULTIPLYING

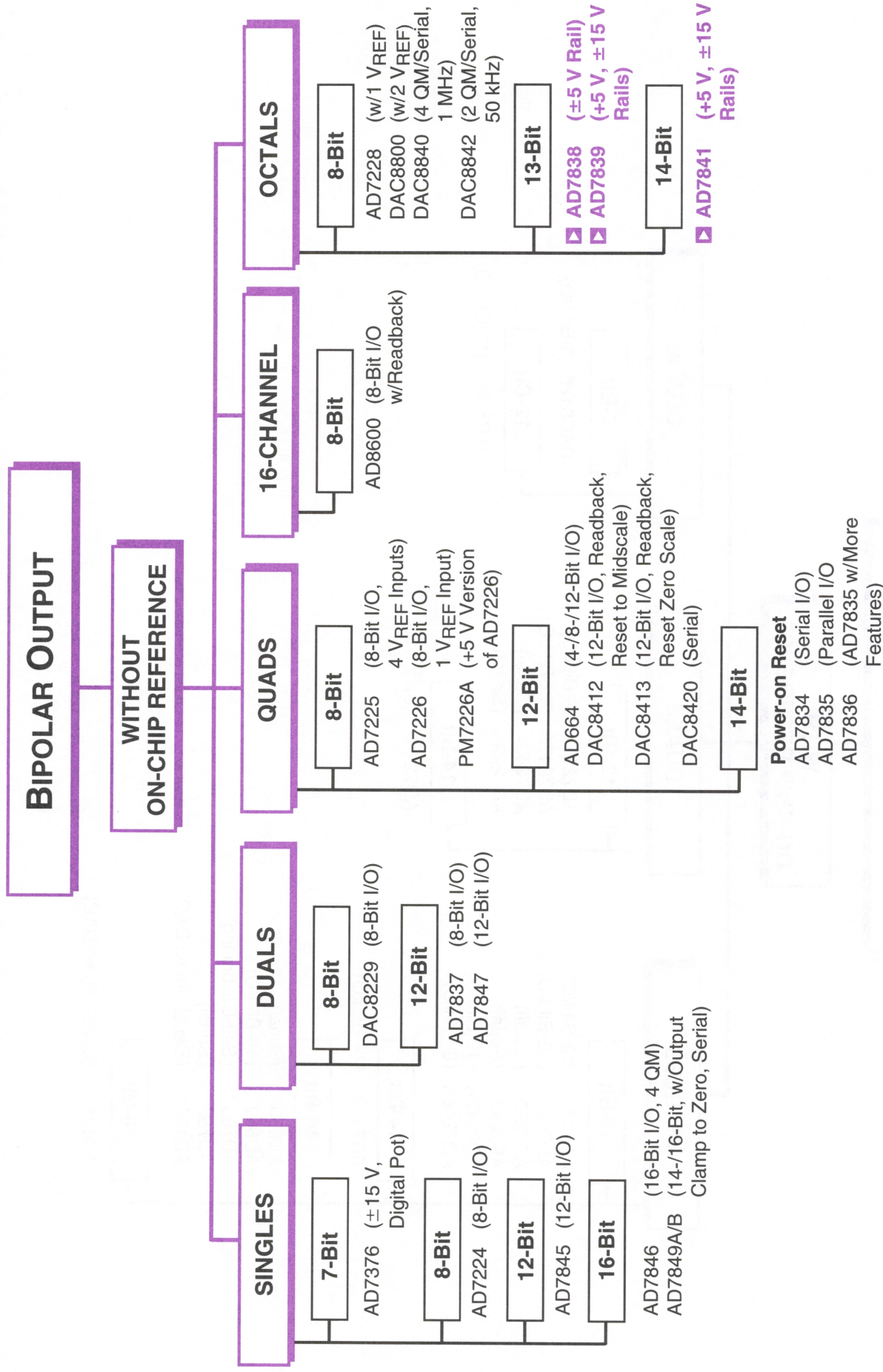


\*Voltage switching ladder.











## TRUE SINGLE SUPPLY

### SINGLES

#### 7-Bit

AD557 (+5 V, 8-Bit I/O)

#### 8-Bit

AD558 (+5/15 V, 8-Bit I/O)  
AD7224 (+15 V, 8-Bit I/O)

▶ AD5300 (+2.7 V, Serial I/O, Rail-to-Rail Output)  
AD7801 (+2.7 V, 8-Bit I/O)

#### 10-Bit

▶ AD5310 (+2.7 V, Serial I/O, Rail-to-Rail Output)  
AD7391 (+2.7 V,  $I_Q = 100 \mu A$ , Serial)  
▶ AD7393 (+2.7 V,  $I_Q = 100 \mu A$ , 10-Bit I/O)

#### 12-Bit

AD7243 (+12/15 V, Serial)  
AD7248A (+12 V, 8-Bit I/O)  
▶ AD5320 (+2.7 V, Serial I/O, Rail-to-Rail Output)  
AD7390 (+2.7 V,  $I_Q = 100 \mu A$ , Serial I/O)  
▶ AD7392 (+2.7 V,  $I_Q = 100 \mu A$ , 12-Bit I/O)  
AD8300 (+3 V, Serial I/O)  
DAC8512 (+5 V, Serial)  
DAC8562 (+5 V, Parallel)

#### 16-Bit

AD420 (+12/32 V, Serial, 4-20 mA)  
AD421 (Loop Powered, 4-20 mA)

### DUALS

#### 8-Bit

AD7302 (+2.7 V, 8-Bit I/O)  
AD7303 (+2.7 V, Serial I/O)  
DAC8228 (+12/15 V, 8-Bit I/O)

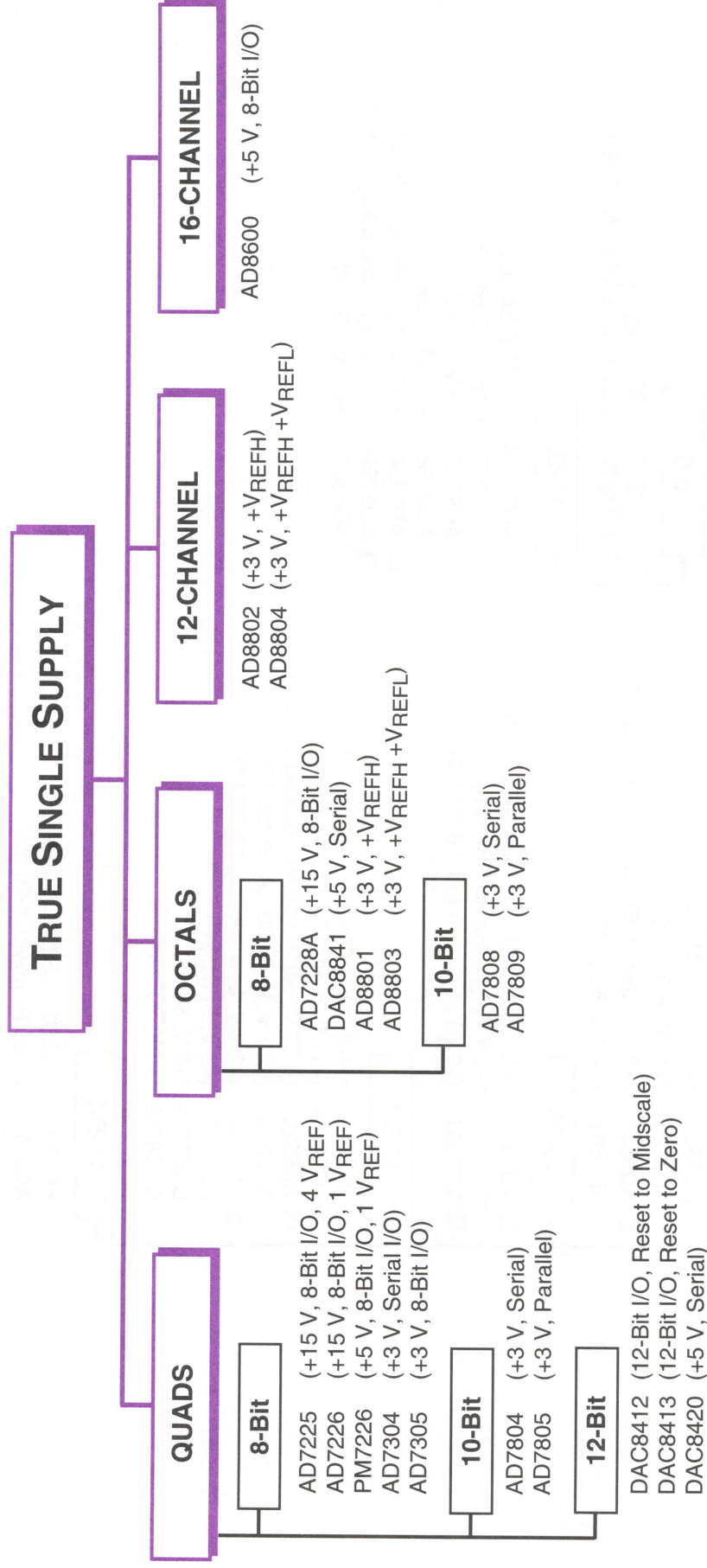
#### 10-Bit

▶ AD7395 (+2.7 V,  $I_Q = 200 \mu A$ , Serial)  
▶ AD7397 (+2.7 V,  $I_Q = 200 \mu A$ , 12-Bit I/O)

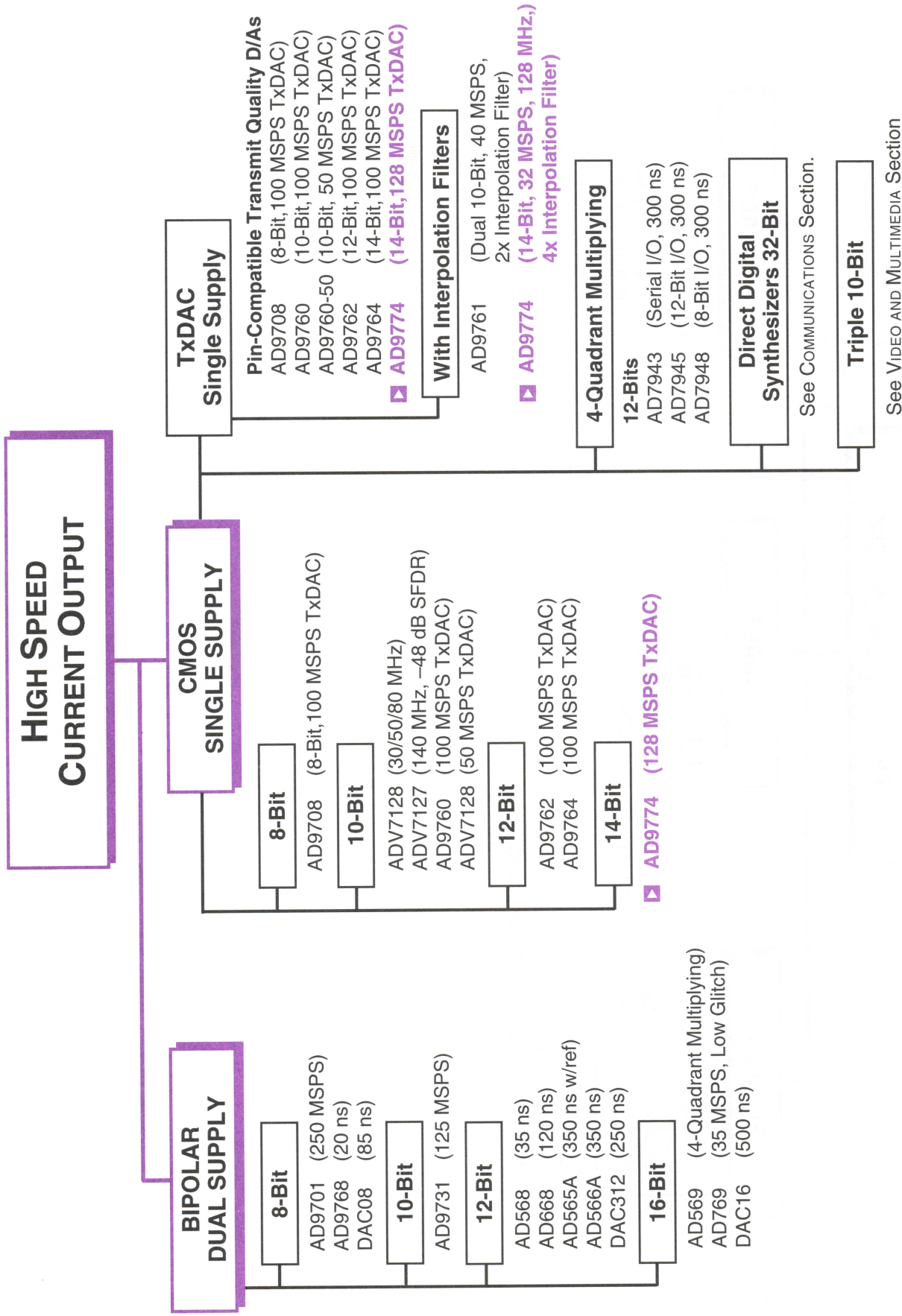
#### 12-Bit

AD7237A (+15 V, 8-Bit I/O)  
AD7247A (+15 V, 12-Bit I/O)  
AD8522 (+5 V, Serial)  
AD8582 (+5 V, Parallel)  
▶ AD7394 (+2.7 V,  $I_Q = 200 \mu A$ , Serial)  
▶ AD7396 (+2.7 V,  $I_Q = 200 \mu A$ , 12-Bit I/O)  
AD8303 (+2.7 V, 10 mW)

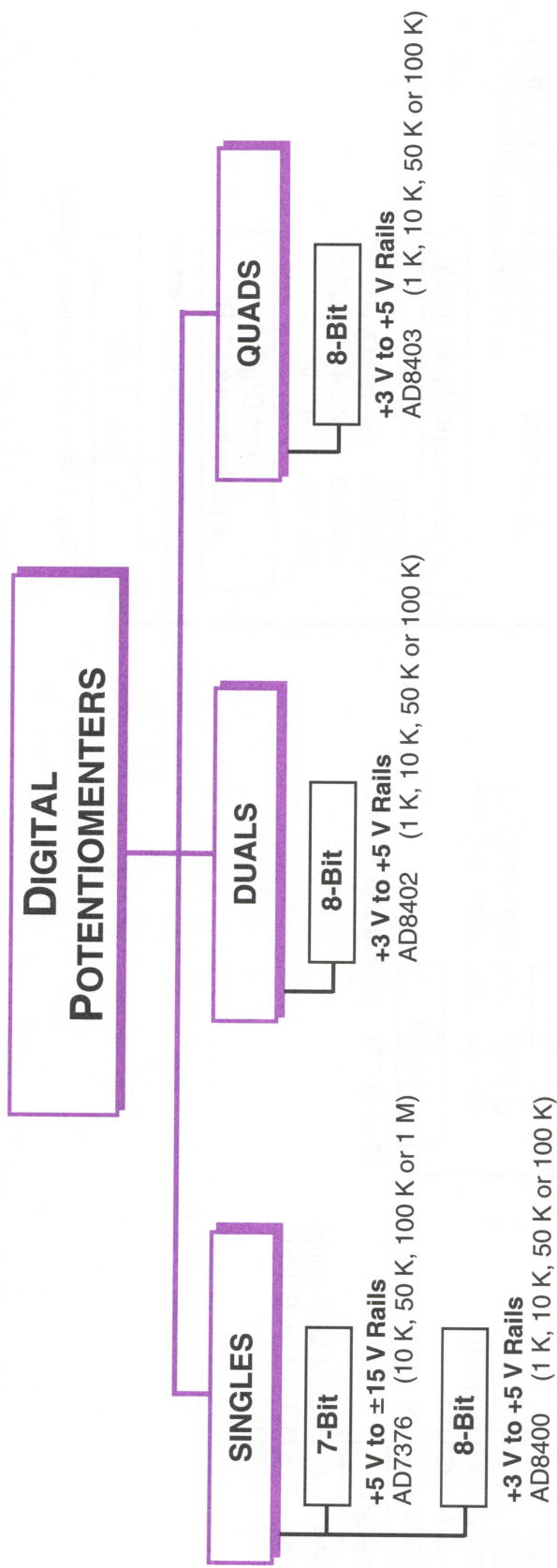














# D/A CONVERTERS

## 4-Quadrant Multiplying

Model	#	Power Supply		Linearity LSBs @ +25°C	Voltage Reference-Volts		I/O	# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax- code
		+V <sub>S</sub> +Volts	+I <sub>S</sub> +mA		Int	Ext						
Singles												
AD7524	8	+5	1	1/2		±V <sub>REF</sub>	P8	1	16	\$ 5.85	Inverted R/2R	1297
AD7533	10	+15	2	1/2 to 2		±V <sub>REF</sub>	P10	0	16	\$ 4.00	Inverted R/2R, Industry Standard	1299
AD7845	12	±15	±5	1/2 to 1		±V <sub>REF</sub>	P12	1	24	\$ 7.40	On-Chip Multiplying Resistors	1364
AD7943	12	+5	0.2	1/2		±V <sub>REF</sub>	S	1	16	\$ 4.65	Inverted R/2R, Fast I/O	1389
AD7945	12	+5	0.2	1/2		±V <sub>REF</sub>	P12	1	20	\$ 4.65	Inverted R/2R, Fast I/O	1389
AD7948	12	+5	0.2	1/2		±V <sub>REF</sub>	P8	1	20	\$ 4.65	Inverted R/2R, Fast I/O	1389
DAC8043	12	+5	0.5	1/2		±V <sub>REF</sub>	S	2	8	\$ 8.95	Inverted R/2R	1624
DAC8143	12	+5	2	1/2 to 1		±V <sub>REF</sub>	S	2	16	\$ 6.53	With Serial Output & Reset	1625
AD7534	14	+12/15	2	1		±V <sub>REF</sub>	P8	2	20	\$16.95	Inverted R/2R	1300
AD7535	14	+12/15	2	2		±V <sub>REF</sub>	P16	2	28	\$18.95	Inverted R/2R	1301
AD7536	14	+12/15	2	1		±V <sub>REF</sub>	P8/14	2	28	\$20.84	Inverted R/2R	1302
AD7538	14	+12/15	2	1		±V <sub>REF</sub>	P14	2	24	\$10.50	Inverted R/2R	1304
AD7849A	14	±12	±5	5		±V <sub>REF</sub>	S	2	20	\$10.50	Requires +5 @ 2.5 mA	1831
AD569	16	±12	13	16 > 26		±V <sub>REF</sub>	P8/16	2	28	\$22.00	Segmented DAC, w/Output Amp	1167
AD7846	16	±15	1	4 > 16		±V <sub>REF</sub>	P16	2	28	\$20.90	With Readback	1365
AD7849B	16	±12	±5	16		±V <sub>REF</sub>	S	2	20	\$13.00	Requires +5 @ 2.5 mA	1831
Duals												
AD7528	8	+5/15	2	1/2		2 @ ±V <sub>REF</sub>	P8	2	20	\$ 5.95	Inverted R/2R, Not TTL @ +15 V	1298
PM7628	8	+12/15	2	1/2		2 @ ±V <sub>REF</sub>	P8	2	20	\$ 2.45	Inverted R/2R, TTL Com. @ 15 V	1329
AD7537	12	+12/15	2	1/2		2 @ V <sub>REF</sub>	P8	2	24	\$14.50	Inverted R/2R	1303
AD7547	12	+15	2	1/2		2 @ V <sub>REF</sub>	P8	1	24	\$14.50	Inverted R/2R	1310
AD7549	12	+15	5	1/2		4 @ V <sub>REF</sub>	P4	2	20	\$16.95	Inverted R/2R	1312
AD7837	12	±15	10/5	1/2 to 1		2 @ ±V <sub>REF</sub>	P8	2	24	\$16.95	±10 V @ 5 mA Output	1362
AD7847	12	±15	10/5	1/2 to 1		2 @ ±V <sub>REF</sub>	P12	2	24	\$16.50	±10 V @ 5 mA Output	1362
DAC8221	12	+5/15	2	1/2		2 @ V <sub>REF</sub>	P12	1	24	\$11.97	Inverted R/2R	1626
DAC8222	12	+5/15	2	1/2		2 @ V <sub>REF</sub>	P12	2	24	\$15.44	Inverted R/2R	1627
DAC8248	12	+5/15	2	1/2		2 @ V <sub>REF</sub>	P8	2	24	\$14.04	Inverted R/2R with Reset to Zero	1630



## 4-Quadrant Multiplying

Model	# Bits	Power Supply Requirements		V or I	Linearity LSBs @ +25°C Bits	Voltage Reference-Volts		# I/O	# Buff	# Pins	Lowest Grade Price 100s	Fax-code
		+Vs	+mA			Int	Ext					

### Quads

DAC8408	8	+5	1.5	I	1/2	4 @ $\pm V_{REF}$		P8	1	28	\$ 8.03	With Readback	1631
AD7564	12	+5	1.75	I	1/2	4 @ $\pm V_{REF}$		S	2	44	\$14.00	Inverted R/2R, with Reset	1313
AD664	12	$\pm 12$	10/19	V	1/2 > 3/4	1 @ $\pm V_{REF}$		P	2	28/44	\$41.75	Parallel 4, 8 or 12 I/O, with Reset & Readback	1218

### Octals

AD8842	8	$\pm 5$	$\pm 8$	V	1	8 @ $\pm V_{REF}$		S	2	24	\$ 7.20	With Clear Function	1433
DAC8840	8	$\pm 5$	$\pm 26$	V	1	8 @ $\pm V_{REF}$		S	1	24	\$ 9.95	+5 V Operation, 2 Quad Multiplying	1637
AD7568	12	+5	3.5	I	1/2	8 @ $\pm V_{REF}$		S	2	44	\$28.00	Inverted R/2R, with Reset	1314

## 2-Quadrant Multiplying

Model	# Bits	Power Supply Requirements		V or I	Linearity LSBs @ +25°C Bits	Voltage Reference-Volts		# I/O	# Buff	# Pins	Lowest Grade Price 100s	Fax-code
		+Vs	+mA			Int	Ext					

### Hex

AD8600	8	+5	32	V	1	1 @ $\pm V_{REF}$		P	2	44	\$32.00	+5 V with Readback	1429
--------	---	----	----	---	---	-------------------	--	---	---	----	---------	--------------------	------



# D/A CONVERTERS

## Bipolar Output with On-Chip Reference

Model	# Bits	Power Supply Requirements				V <sub>OUT</sub> Volts	I <sub>OUT</sub> mA	Linearity LSBs @ +25°C	Voltage Reference-Volts		# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax- code
		+V <sub>CC</sub> +Volts	+I <sub>CC</sub> +mA	-V <sub>EE</sub> -Volts	-I <sub>EE</sub> -mA				Int	I/O					
Singles															
AD667	12	+15	12	-15	25	±2.5	5	1/4 to 1/2	+10	P4/8/12	2	28	\$11.40	Industry Standard Complete	1219
AD767	12	+15	12	-15	23	±2.5	5	1/2 to 1	+10	P12	1	24	\$10.84	Industry Standard Complete	1332
AD7233	12	+15	10	-15	3	±5	5	1/2 to 1	+5	S	1	8	\$ 7.00	5 MHz I/O	1262
AD7243	12	+15	9	-15	2	+5	5	1/2 to 1	+5	S	1	16	\$ 7.00	5 MHz I/O, with Readback, Reset	1265
AD7245A	12	+12	9	-12	5	5	5	1/2 to 1	+5	P12	2	24	\$ 8.90		1268
AD7248A	12	+12	9	-12	5	5	5	1/2 to 1	+5	P8	2	24	\$11.35		1268
AD7840	14	+5	14	-5	6	±3	5	1/2 to 2	+3	P14	2	24/28	\$10.50		1363
AD660	16	+15	18	-15	18	10, ±10	5	1 to 2	+10	P8/S	2	24	\$16.00	Requires a +5 V Logic Supply, with Readback, Reset	1217
AD669	16	+15	18	-15	18	10, ±10	5	1 to 2	+10	P16	2		\$16.00	Requires a +5 V Logic Supply	1221
AD760	16/18	+15	18	-15	18	±10, +10	5	3/4	+10	P8	2	28	\$66.00	Self-Calibrating, 10 MHz I/O	1827
AD766	16	+5	12	-5	15	±3.0	2	2	2.5	S	2		\$12.10	12.5 MHz I/O, DSP Interface	1330
Duals															
AD7237A	12	+12	18	-15	18	±5	5	1/2 to 1	+5	P8	2	24	\$16.50	With Reset, 4 QM	1263
AD7242	12	+5	12	-5	27	±3	5	1/2 to 1	+3	S	2	24	\$15.40	5 MHz Serial	1264
AD7247A	12	+12	18	-15	18	±5	5	1/2 to 1	+5	P12	2	24	\$16.50	With Reset, 4 QM	1263
AD7249	12	+12 to 15	27	-15	12	±5/10	5	1/2 to 1		S	1	24	\$10.85	2 MHz Serial	1272
AD7244	14	+5	12	-5	27	+5 V	12	5	+3	S	2	24	\$19.75	5 MHz Serial	1264
Quads															
DAC8426	8	+15	14	-5	10	±5	10, 0	1 to 2	+10	P8	1	20	\$15.95	AD7226 with Internal Reference	1635
AD783x Series, Has Power-On Reset Function															
AD75004	14	+12	30	-12	30	±5	5	1/2	+5	P8	2	24/28	\$37.95	SPI I/O, w/Shutdown Clear	1284



## Bipolar Output without On-Chip Reference

Model	#	Power Supply Requirements				V <sub>OUT</sub> Volts	I <sub>OUT</sub> mA	Linearity LSBs @ +25°C	Voltage Reference—		# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax- code
		+V <sub>CC</sub> +Volts	+I <sub>CC</sub> +mA	-V <sub>EE</sub> -Volts	-I <sub>EE</sub> -mA				Volts Ext	I/O					
Singles															
AD7224	8	+15	6	-5	5	±V <sub>REF</sub>	5	1/2 to 1	+10	P8	2	18	\$ 4.95		1257
AD7845	12	+15	10	-15	4	±V <sub>REF</sub>	5	1/2 to 1	±V <sub>REF</sub>	P12	1	24	\$ 7.40	With On-Chip 4-Quad Mult Resistors	1364
AD7849A	14	+12/15	5	-12/15	5	±10	5	4 to 6	±V <sub>REF</sub>	S	2	20	\$10.50	Output Control on Power-Up/ Power-Down, +5 V Logic Req.	1831
AD569	16	+12	13	-12	13	±5	5	16 to 26	±5	P8/16	2	28	\$22.00	4-Quad Mult	1167
AD7846	16	+15	5.5	-15	5	±10	5	4 to 16	+5	P16	2	28	\$20.90	4-Quad Mult	1365
AD7849B	16	+5	2.5					4 to 6	±V <sub>REF</sub>				\$13.00	Output Control on Power-Up/ Power-Down, +5 V Logic Req.	1831
Duals															
DAC8229	8	+12 to 15	6	-5	5	-10/2.5	5	1/2	-10/+2.5	P8	1	20	\$ 4.35	Pins with AD7528	1629
AD7837	12	+15	10	-15	6	±V <sub>REF</sub>	5	1/2 to 1	±V <sub>REF</sub>	P8	2	24	\$16.50	With Reset, 4 QM	1362
AD7847	12	+15	10	-15	6	±V <sub>REF</sub>	5	1/2 to 1	±V <sub>REF</sub>	P12	1	24	\$16.50	With Reset, 4 QM	1362
Quads															
AD7225	8	+15	10	-5	9	±5	5	1/2 to 1	4 @ V <sub>H</sub>	P8	2	24	\$12.00	Single Supply Mode	1258
AD7226	8	+12-15	13	-5	11	±5	5	1/2 to 1	1 @ V <sub>H</sub>	P8	1	20/24	\$18.50	Single Supply Mode	1259
PM7226	8	+12-+15	13	-5	11	±5	5	1/2 to 1	1 @ V <sub>H</sub>	P8	2	20	\$14.60	TTL Compatible @ +15 V Rail	1741
AD664	12	+15	15	-15	19	±V <sub>REF</sub>	5	3/4	±V <sub>REF</sub>	P4/8/12	2	28/44	\$41.75	With Readback, Reset, 4 QM	1218
DAC8412	12	+5 or ±15	12	15	10	V <sub>H</sub> /V <sub>L</sub>	5	1 to 2	1 @ V <sub>H</sub>	P12	2	28	\$26.95	With Readback, Resets to Midscale	1632
DAC8413	12	+5 or ±15	12	15	10	V <sub>H</sub> /V <sub>L</sub>	5	1 to 2	1 @ V <sub>H</sub>	P12	2	28	\$26.95	With Readback, Resets to Zero	1632
DAC8420	12	15	12	15	12	V <sub>L</sub> /V <sub>H</sub>	5	1 to 2	1 @ V <sub>H</sub>	S	2	16	\$29.95	10 MHz I/O	1634
AD783x Series, Has Power-On Reset Function															
AD7834	14	+15	10	-15	10	±8.192	5	2	1 V <sub>H</sub> 1 V <sub>L</sub>	S	2	28	\$25.00	10 MHz I/O	1859
AD7835	14	+15	10	-15	10	±8.192	5	1	2 V <sub>H</sub> 2 V <sub>L</sub>	P8/16	2	44	\$26.30	Requires a +5 V Logic Supply	1859
AD7836	14	+15	10	-15	10	±10	5	2 to 1	2 V <sub>H</sub> 2 V <sub>L</sub>		2	44	\$26.30	Requires a +5 V Logic Supply	2030



# D/A CONVERTERS

## Bipolar Output without On-Chip Reference

Model	# Bits	Power Supply Requirements				V <sub>OUT</sub> Volts	I <sub>OUT</sub> mA	Linearity LSBs @ +25°C	Voltage Reference-Volts			# I/O	# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax- code
		+V <sub>CC</sub> +Volts	+I <sub>CC</sub> +mA	-V <sub>EE</sub> -Volts	-I <sub>EE</sub> -mA				Int	Ext							
Octals																	
AD7228A	8	+15	16	-5	14	±5	5	1		+2	> 10	P8	1	20	\$17.25	+5 V Operation	1261
AD8842	8	+5	14	-5	13	±3	±5	1		8 @ ±V <sub>REF</sub>		S	1	24	\$ 7.20	6 MHz Serial, with Reset	1433
DAC8800	8	+12	2	-5	0.2		V <sub>H</sub> /V <sub>L</sub> /R <sub>FB</sub>	1/2		2 @ V <sub>H</sub> /V <sub>L</sub>		S	1	20	\$ 8.25	8 MHz Serial	1636
DAC8840	8	+5	26	-5	26	±3	±5	1		8 @ ±V <sub>REF</sub>		S	1	24	\$ 9.95	6 MHz Serial, with Reset	1637
16-Channel																	
AD8600	8	+5	35	-5	35	±3	2	1		+2.5		P8	2	44	\$32.00	With Readback	1429
▶ AD7838	13	+5	12	-5	12	±4.5	5	2		4 @ ± V <sub>REF</sub>		P13	2	44	\$32.85	Pins w/Max 547	2248
▶ AD7839	13	+5 or ±15	14	-15	14	±10	5	2		3 @ V <sub>H</sub> /V <sub>L</sub>		P13	2	44	\$40.00	Power or Reset	2249
▶ AD7841	14	+5 or ±15	14	-15	14	±10	5	2		3 @ V <sub>H</sub> /V <sub>L</sub>		P13	2	44	\$45.00	Power or Reset	2434

▶ = New Product since 1997 Short Form Designers' Guide.



# D/A CONVERTERS

## True Single Supply

Model		Power Supply Requirements		Output Voltage Volts	Linearity @ +25°C Bits	Voltage Reference-Volts		I/O	# Buff	# Pins	Lowest Grade Price		Comments	Fax-code
		# +Vs	+Vs +mA			Int	Ext				100s			
Singles														
AD557	7	+5	23	2.56	1	+1.2		P8	1	16	\$ 3.85	7-Bit Version of AD558		1159
AD558	8	+5 to 15	23	2.56 to 10	1/2	+1.2		P8	1	16	\$ 6.82	Industry Standard Complete		1160
AD5300	8	+2.7 to 5.5	0.15	0 to V <sub>DD</sub>	1		+V <sub>DD</sub>	S		6/8	\$ TBD	Rail-to-Rail Output, 3-Wire I/O, SPI, QSPI, $\mu$ Wire		2173
AD7224	8	+15	6	+10	1/2		+10 V	P8	2	18	\$ 4.95	V <sub>REF</sub> = +2 V to +12.5 V		1257
AD7801	8	+2.7 to 5.5	1.55	0 to V <sub>DD</sub>	1	V <sub>DD</sub> /2	1 to V <sub>DD</sub> /2	P8	2	20	\$ 2.49	1 $\mu$ A in Power-Down, Power On Reset		2084
AD8400	8	+3	1.0	+V <sub>REF</sub>	1 1/2		+V <sub>REF</sub>	S	2	8	\$ 1.29	3-Terminal Pot Function, 1K/10K/50K/100K		1867
AD5310	10	+2.7 to 5.5	0.15	0 to V <sub>DD</sub>	1		+V <sub>DD</sub>	S	1	6	\$ TBD	Rail-to-Rail Output, 3-Wire Serial I/O, SPI, QSPI, $\mu$ Wire		2197
AD7391	10	+2.7	0.1	+1.2	1.6	+1.2		S	2	8	\$ 5.60	With Readback		1957
AD7393	10	+2.7	0.1	+1.2	1.6	+1.2		P10	2	20	\$ 3.29	Rail-to-Rail Output		2068
AD5320	12	+2.7 to 5.5	0.15	0 to V <sub>DD</sub>	4		+V <sub>DD</sub>	S	1	6/8	\$ TBD	Rail-to-Rail Output, 3-Wire I/O, SPI, QSPI, $\mu$ Wire		2405
AD7243	12	+12 to 15	10	5 to 12	1/2 to 1	+3		S	2	16	\$ 7.00	3 MHz I/O with Readback & Reset		1265
AD7390	12	+2.7	0.1	+1.2	1.6	+1.2		S	2	8	\$ 5.60	SPI and CSPI I/O		1957
AD7392	12	+2.7	0.1	+1.2	1.6	+1.2		P12	2	20	\$ 5.60	Rail-to-Rail Output		2068
AD8300	12	+3	1.7	+2	2	+2.05		S	2	8	\$ 5.25	16 MHz Serial Clk., with Reset		1808
DAC8512	12	+5	1	+4.096	2	+2.5		S	1	8	\$ 5.35	14 MHz Serial Clk., with Reset, I <sub>Q</sub> = 2.7 mA with CMOS		1895
DAC8562	12	+5	1	+4.096	1/2	+2.5		P12	1	20	\$ 8.95	I <sub>Q</sub> = 1 mA with CMOS, 6 mA with TTL, with Reset		1896
AD420	16	+24 to 32	5.5	0 to 5	8	+5		S	1	24	\$11.50	0/4-to-20 mA Output, Prem V <sub>REF</sub>		1135
AD421	16	+3/+5	0.7	0 to 5	8	+1.25/+2.5		S	1	16	\$ 7.95	4-to-20 mA Output, with Alarm Currents		1892
Duals														
AD7302	8	+2.7	2.5	0 to V <sub>DD</sub>	1	V <sub>DD</sub> /2	1 to V <sub>DD</sub> /2	P8	2	20	\$ 3.27	Power-On Reset, Rail-to-Rail Output, 1 $\mu$ A Shutdown		2092
AD7303	8	+2.7	2.5	0 to V <sub>DD</sub>	1	+1.2		S	2	8	\$ 3.01	Power-On Reset, Rail-to-Rail Output, 1 $\mu$ A Shutdown		2044
AD8402	8	+3	2.7	+V <sub>REF</sub>	1 1/2		+V <sub>REF</sub>	S	2	14	\$ 1.95	3-Terminal Pot Function 1K/10K/50K/100K		1867
AD7395	10	+2.7	0.2	+V <sub>REF</sub>	1		+V <sub>REF</sub>	SPI	2	14	\$ TBD	With Shutdown I <sub>Q</sub> = 1 $\mu$ A		2250
AD7397	10	+2.7	0.1	0 to +V <sub>DD</sub>	1		+V <sub>REF</sub>	P12	2	24	\$ TBD	With Shutdown I <sub>Q</sub> = 1 $\mu$ A		2250
AD7237A	12	+12	18	+10	1/2 to 1	+3		P8	2	24	\$16.50	Dual Supply Mode Also		1263
AD7247A	12	+12	18	+10	1/2 to 1	+3		P12	2	24	\$16.50	Dual Supply Mode Also		1263
AD7249	12	+12 to 15	2	+5/10	1/2 to 1	+3		S	1	24	\$13.55	2 MHz Serial, with Reset		1272
AD7394	12	+2.7	0.2	+V <sub>REF</sub>	1		+V <sub>REF</sub>	SPI	2	14	\$ TBD	With Shutdown I <sub>Q</sub> = 1 $\mu$ A		2250

▣ = New Product since 1997 Short Form Designers' Guide.



# D/A CONVERTERS

## True Single Supply

Model	# Bits	Power Supply Requirements		Output Voltage	Linearity @ +25°C	Voltage Reference-Volts		# I/O	# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		+V <sub>S</sub> +Volts	+I <sub>S</sub> +mA			Int	Ext						
Duals													
AD7396	12	+2.7	0.1	0 to +V <sub>DD</sub>	1	+V <sub>REF</sub>		P12	2	24	\$ TBD	With Shutdown I <sub>Q</sub> = 1 μA	2250
AD8303	12	+2.7	2	2.0475	2	+2.05		S	2	8	\$ 8.46	With Shutdown, I <sub>S</sub> = 50 μA	1946
AD8522	12	+5	2	4.096	2	+2.5		S	1	14	\$ 9.95	14.2 MHz Serial Clk., I <sub>Q</sub> = 5 mA with TTL	1427
AD8582	12	+5	2	4.096	2	+2.5		P12	1	24	\$11.95	I <sub>Q</sub> = 5 mA with TTL, with Reset	1428
Quads													
AD7225	8	+15	10	+10 V	1	4 @ +V <sub>REF</sub>		P8	2	24	\$18.50	Dual Supply Mode, +12 V + -5 V	1258
AD7226	8	+15	13	+10 V	1	1 @ +V <sub>REF</sub>		P8	2	20	\$18.50	Dual Supply Mode, +12 V + -5 V	1259
AD7304	8	+2.7	5	0 to +V <sub>REF</sub>	1	1 V <sub>H</sub> & 1 V <sub>L</sub>		S	1	16	\$ 5.82	SPI I/O, with Shutdown Clear	2088
AD7305	8	+2.7	5	0 to +V <sub>REF</sub>	1	1 V <sub>H</sub>		P8	2	20	\$ 5.82	Pins with Ind Std AD7226	2088
AD8403	8	+5	0.05	+V <sub>REF</sub>	1 1/2	1 @ +V <sub>REF</sub>		S	1	14	\$ 3.50	3-Terminal Pot. Function 10K/50K/100K, I <sub>Q</sub> = 4 mA	1867
AD7804	10	+3.3	12	V <sub>BIAS</sub> - V <sub>SWING</sub>	2 to 3	+1.2		S	2	16/28	\$ 6.76	10 MHz I/O, with Reset, I <sub>Q</sub> = 230 μA in Shutdown	1830
AD7805	10	+3.3	12	V <sub>BIAS</sub> - V <sub>SWING</sub>	2 to 3	+1.2		P8	2	16/28	\$ 7.35	10 MHz I/O, with Reset, I <sub>Q</sub> = 230 μA in Shutdown	1830
DAC8420	12	+5		V <sub>H</sub> -V <sub>L</sub>	2 to 4		1 V <sub>H</sub> & 1 V <sub>L</sub>	S	2		\$29.95	With Reset	1634
Octals													
AD7228A	8	+5	16	+1.2 V	1 to 2		1 @ +1.2 V	P8	1	24	\$17.25	Or +12 to 15 V Operation	1261
AD8801	8	+3		V <sub>H</sub> -V <sub>L</sub>	1.5		1 V <sub>H</sub>	S	2	16	\$ 3.48	3-Wire Serial	1876
AD8803	8	+3	4	V <sub>H</sub> -V <sub>L</sub>	1.5		1 V <sub>H</sub> & 1 V <sub>L</sub>	S	2	16	\$ 3.48	3-Wire Serial	1876
DAC8841	8	+5	26	+1.5 V	1 to 3		8 @ +V <sub>REF</sub>	S	1	24	\$ 9.95	6 MHz I/O with Readback & Reset	1638
AD7808	10	+5.5	8	V <sub>BIAS</sub> - V <sub>SWING</sub>	2 to 3	+1.2		S	2	20/44	\$10.95	10 MHz I/O, with Reset, I <sub>Q</sub> = 230 μA in Shutdown	1830
AD7809	10	+5	8	V <sub>BIAS</sub> - V <sub>SWING</sub>	2 to 3	+1.2		P10	2	44	\$13.94	With Reset, I <sub>Q</sub> = 230 μA in Shutdown	1830
12-Channel													
AD8802	8	+5	4	V <sub>REFH</sub>	1 1/2		1 V <sub>H</sub>	S	1	20	\$ 4.75	30 MHz I/O, Reset to V <sub>REF</sub> /2	1933
AD8804	8	+5	4	V <sub>REFH-L</sub>	1 1/2		1 V <sub>H</sub> & 1 V <sub>L</sub>	S	1	20	\$ 4.75	30 MHz I/O, Reset to V <sub>REFL</sub>	1933
16-Channel													
AD8600	8	+5	32	0 to +2.3 V	1	+2.3		P8	2	44	\$32.00	With Readback & Reset	1429

■ = New Product since 1997 Short Form Designers' Guide.



# D/A CONVERTERS

## True Single Supply

4 mA to 20 mA Output

Model	# Bits	Power Supply Requirements		V <sub>OUT</sub> Volts	I <sub>OUT</sub> mA	Linearity LSBs @ +25°C	Voltage Reference-Volts		I/O	# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		+V <sub>CC</sub> +Volts	+I <sub>CC</sub> +mA				Int	Ext						
AD420	16	+24/+32	5.5	0 to +5	4 to 20	8	+5		S	1	20	\$11.50	0 to 20 mA/24 mA, PRGM	1135
AD421	16	+3/+5	0.65	0 to +5	4 to 20	8	+1.25/2.5		S	1	16	\$ 7.95	0 to 20 mA/24 mA, PRGM	1892

## High Speed Current Output

Model	# Bits	Power Supply		I <sub>OUT</sub> mA	Settling Time ns	Update Rate MHz	Linearity @ +25°C LSBs	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Volts	mA								

### Dual Supply

AD9768	8	±5	3.6	20	5	100	1/2	18/20	\$22.00	ECL, 400 V/μs Slew Rate	1481
DAC08	8	+5/-15	3.8	2.04	135		1/2	16	\$ 1.20	Industry Standard	1618

AD561	10	±15	10/1.5	-2.4	250		NS	16	\$17.18	Internal V <sub>REF</sub>	1161
AD9731	10	±5	10/75	20.48	4.5	125	3/4	28	\$12.00	Low Power/Cost Upgrade to AD9721	2167

AD565A	12	±12	5/18	-2.4	400		3/4	24	\$17.00	Internal V <sub>REF</sub>	1164
AD566A	12	±12	5/18	-2.4	400		3/4	24	\$22.07	External V <sub>REF</sub> , Ceramic Package Only	1164
AD568	12	±15	32/8	10.24	23		1	24	\$36.30	350 pV-sec Glitch, Ceramic Package Only	1166
AD668	12	±12	32/9	10.24	90		1	24	\$36.30	350 pV-sec Glitch, Ceramic Package Only	1220
DAC312	12	±5, ±15	7/16	4	500		1/2 to 1	20	\$ 4.50	12-Bit Version of DAC08	1622

AD768	14/16	±5		20.48	35	30	6	44	\$24.95	35 pV-sec Glitch, 83 dB SFDR @ 1 MHz	1334
-------	-------	----	--	-------	----	----	---	----	---------	--------------------------------------	------

DAC16	16	+5, -15	20/10	4	500		1.5	24	\$25.00	Excellent Linearity	1621
-------	----	---------	-------	---	-----	--	-----	----	---------	---------------------	------

### Single Supply

AD9701	8	-5.2	160	-26.87	6	250	1	22/28	\$16.42	Complete Composite Video	1474
ADV7127	10	+3.3	3.5	18.5		125	1	48	\$ TBD	RS-343/RS-170 Output	2243
ADV7128	10	+5	125	18.5		30, 50, 80	1/2	40	\$ 8.15	RS-170 Output	1598

AD7943	12	+5	0.2	±V <sub>REF</sub> /5K	500	0.5	1	16	\$ 4.65	4-Quadrant Multiplying, Low Power	1389
AD7945	12	+5	0.2	±V <sub>REF</sub> /5K	500	0.5	1	20	\$ 4.65	4-Quadrant Multiplying	1389
AD7948	12	+5	0.2	±V <sub>REF</sub> /5K	500	0.5	1	20	\$ 4.65	4-Quadrant Multiplying	1389



# D/A CONVERTERS

## High Speed Current Output

Model	# Bits	Power Supply Volts	I <sub>OUT</sub> mA	Settling Time ns	Update Rate MHz	Linearity @ +25°C LSBs	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Single Supply TxDACs</b>										
AD9708*	8	+2.7 to +5	30	35	125	1/2	28	\$ 4.50	7.2 ENOBs @ F <sub>OUT</sub> = 12.5 MHz	2058
AD9760*	10	+2.7 to +5	30	35	50	1/2	28	\$ 8.50	57 dB SFDR @ F <sub>OUT</sub> = 20 MHz	1989
		+2.7 to +5	30	35	100	1/2	28	\$10.00	57 dB SFDR @ F <sub>OUT</sub> = 20 MHz	1989
AD9761	10	+2.7 to +5	25	35	40	1 3/4	28	\$13.95	Dual w/2× Interpolation	2135
AD9762*	12	+2.7 to +5	30	35	100	2.5	28	\$17.86	70 dB SFDR @ F <sub>OUT</sub> = 5 MHz	2008
AD9764*	14	+2.7 to +5	30	35	80	4	28	\$22.56	Excellent Multitone Perm.	2057
▣ AD9774	14	+2.7 to +5	90	35	128	2.5	44	\$40.00	4× Interpolation, 32 MSPS Data	2168

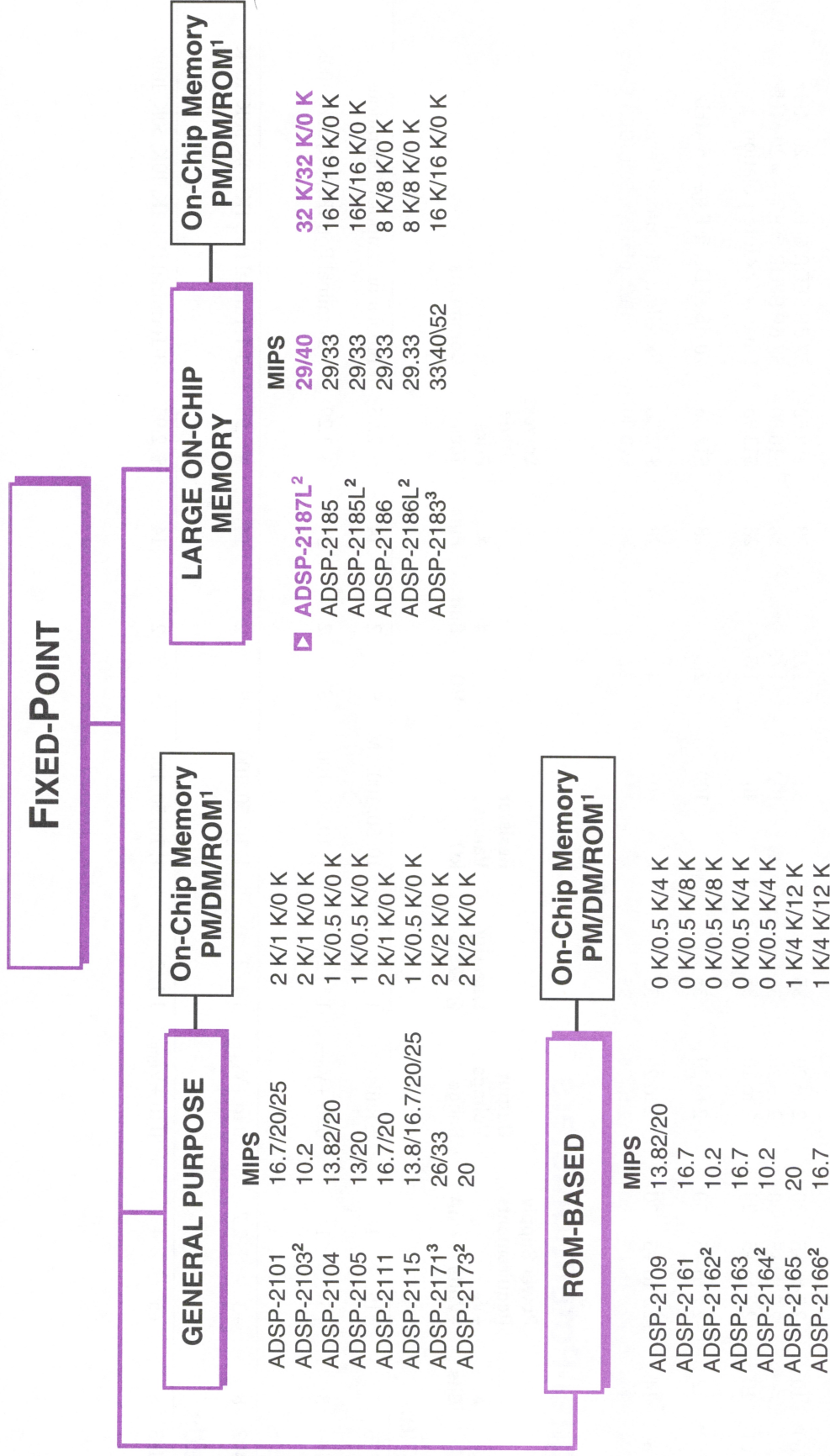
## Digital Potentiometers

Model	# Bits	Power Supply Requirements +V <sub>S</sub> +Volts	Output Voltage Range	Linearity @ +25°C	Resistor Values kΩ	I/O	# Buff	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Singles</b>											
AD7376	7	±15	4	± Rails	1	S	2	14	\$ 2.95	Bipolar or Unipolar Operations	2111
AD8400	8	+5	1	0 to +V <sub>REF</sub>	1 1/2	S	2	8	\$ 1.29	3-Terminal Pot, 1K, 10K, 50K, 100K	1867
<b>Duals</b>											
AD8402	8	+3	2.7	0 to +V <sub>REF</sub>	1 1/2	S	2	14	\$ 1.95	3-Terminal Pot, 1K, 10K, 50K, 100K	1867
<b>Quads</b>											
AD8403	8	+5	4	0 to +V <sub>REF</sub>	1 1/2	S	2	14	\$ 2.95	3-Terminal Pot, 1K, 10K, 50K, 100K	1867

\*All TxDAC are pin for pin.

▣ = New Product since 1997 Short Form Designers' Guide.





¹ PM/DM/ROM = Program RAM/Data RAM/Program ROM

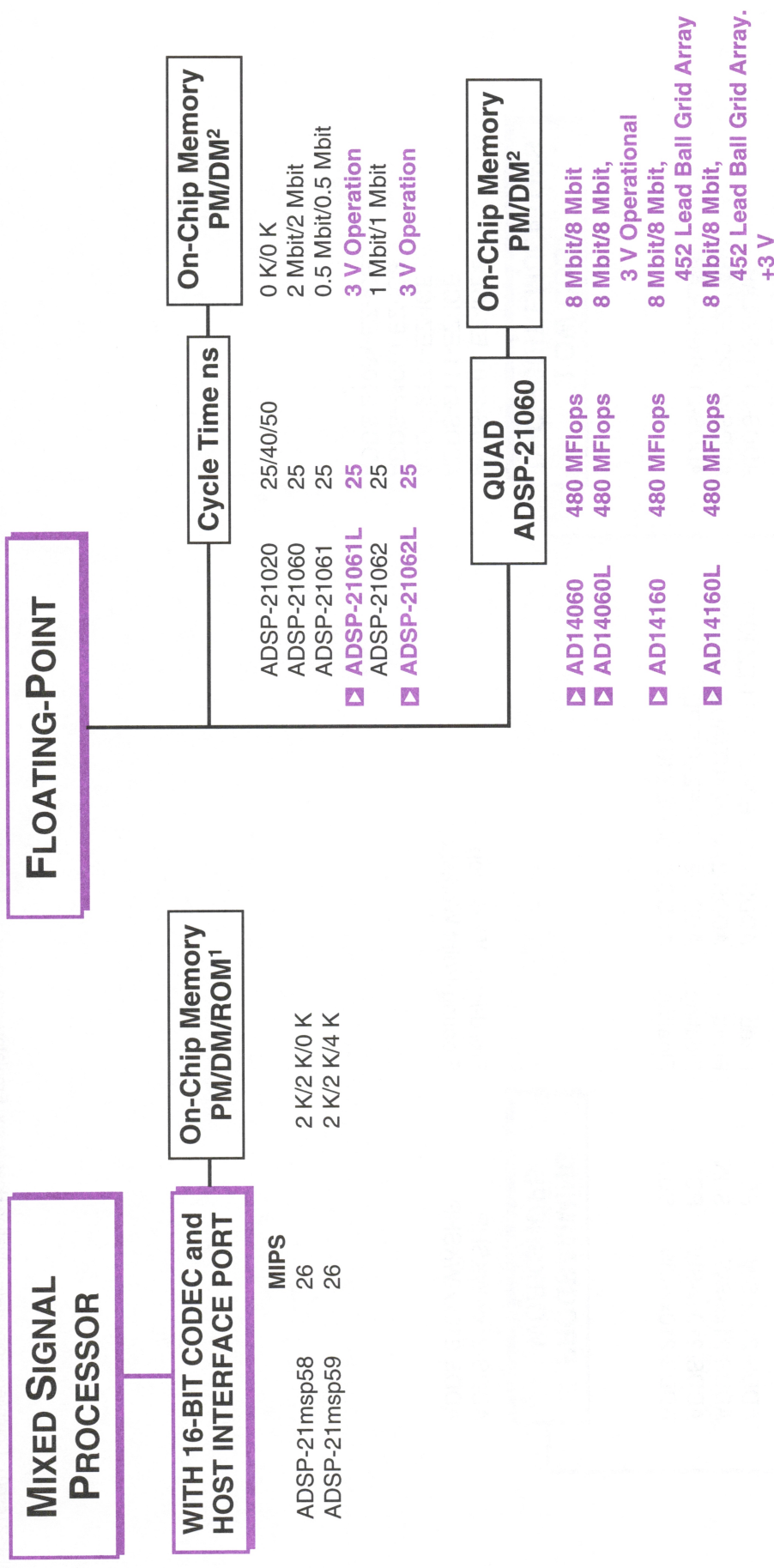
² +3.3 V Operation

³ Multiple Power-Down Modes

▶ = New Product since 1997 Short Form Designers' Guide.



# DIGITAL SIGNAL PROCESSING



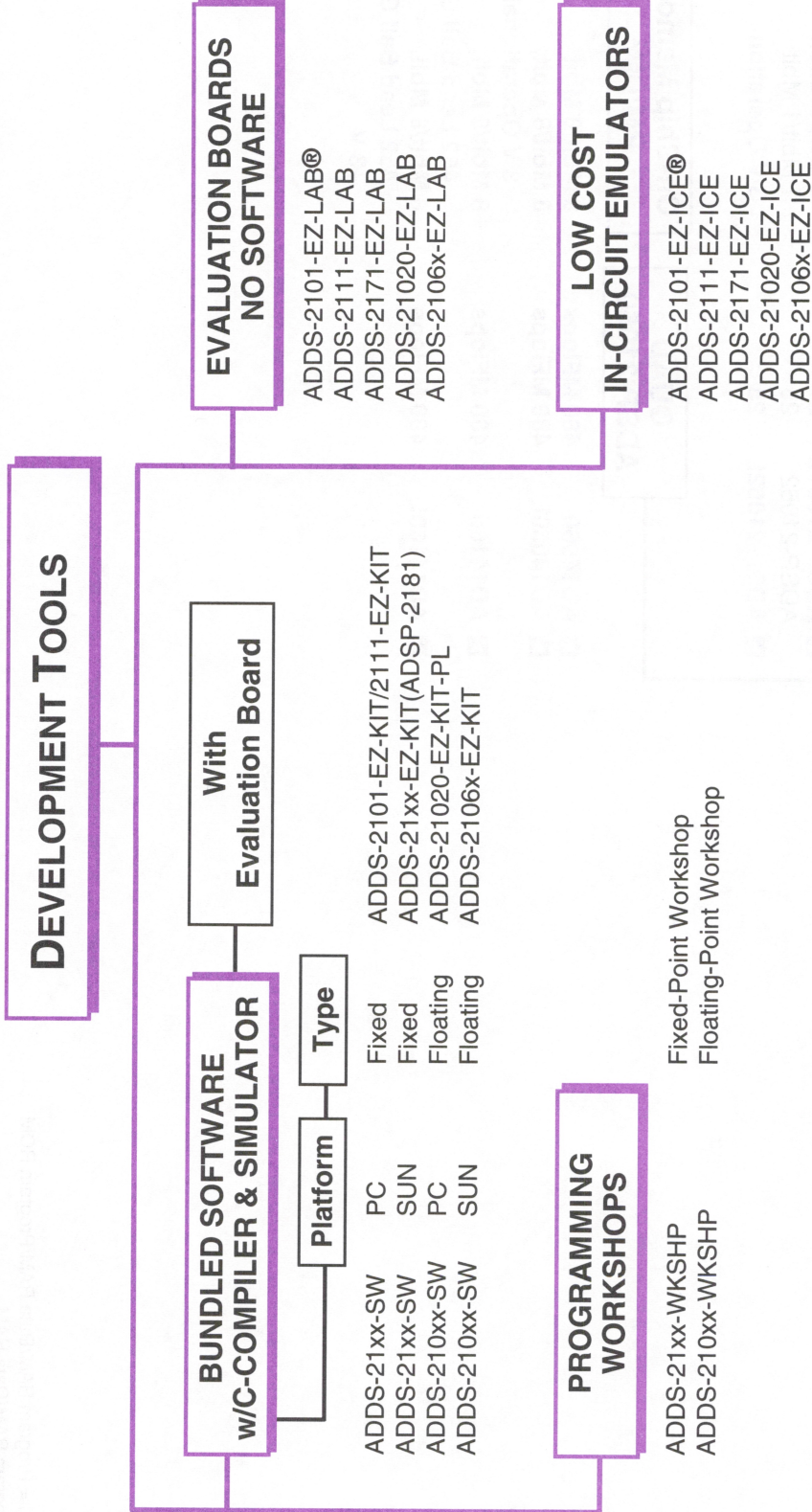
<sup>1</sup> PM/DM/ROM = Program RAM/Data RAM/Program ROM

<sup>2</sup> PM/DM = Program RAM/Data RAM

▶ = New Product since 1997 Short Form Designers' Guide.



# DIGITAL SIGNAL PROCESSING



ADSP-21csp01: Compilers/Software/Evaluation Boards and Emulators are under development.  
EZ-ICE and EZ-LAB are registered trademarks of Analog Devices, Inc.

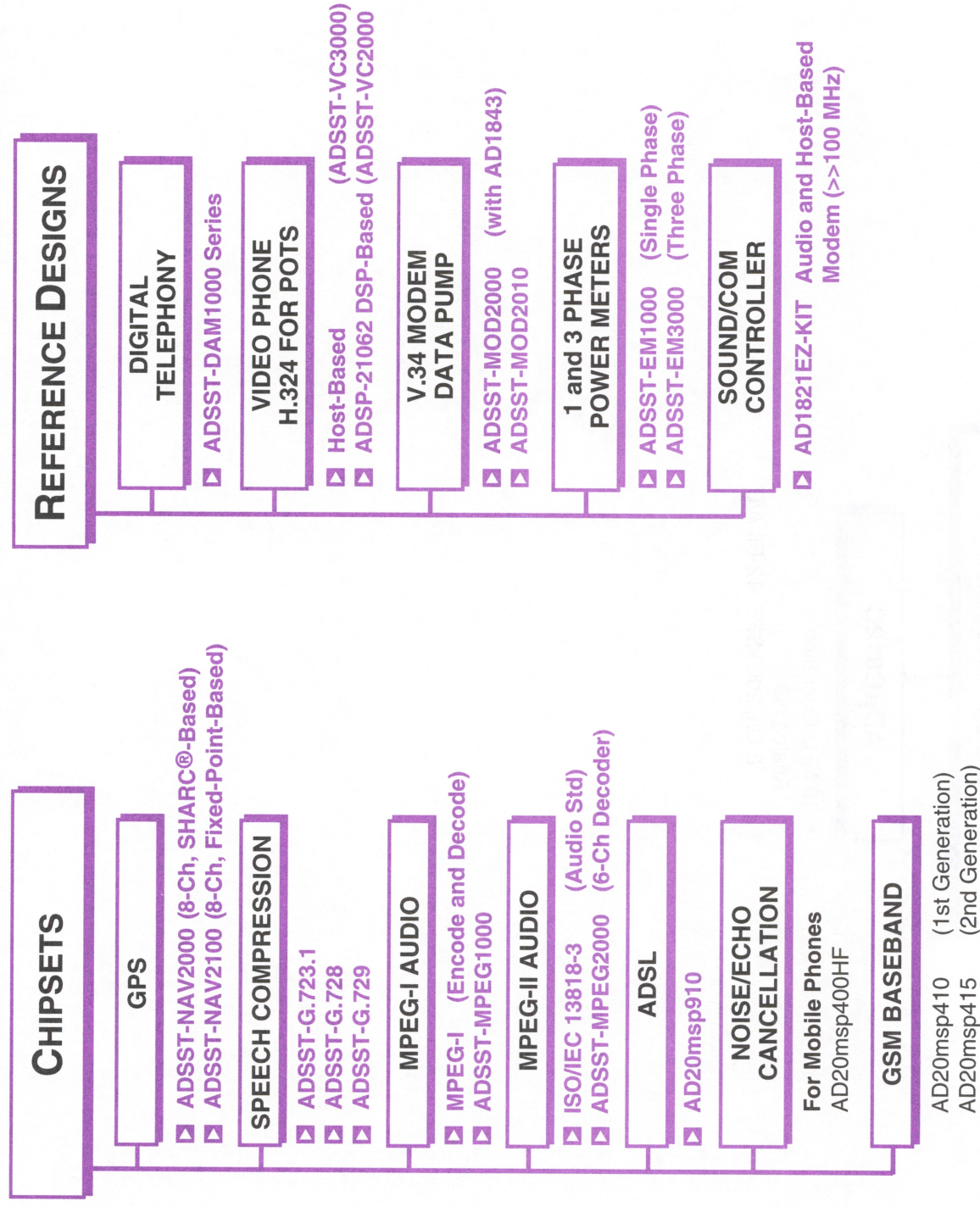


## **μCOMPUTER 8051-BASED**

### **ADμC812C**

- 16 MHz Operation  
Analog I/O  
8-Ch, 200 kSPS, 12-Bit A/D







## Fixed-Point

Model	MIPS	Cycle Time ns	CLK IN MHz	Program		Data RAM	Host Port	V <sub>CC</sub> +3.3 V	# Pins	Lowest Grade Price 100s	Comments	Fax- code
				RAM	ROM							
General Purpose												
ADSP-2101	10>25	40>100	10>25		2K × 24	1K × 16	No	No	68	\$19.90		1966
ADSP-2103	10.24	100	10.24		2K × 24	1K × 16	No	Yes	68/80	\$29.00		1966
ADSP-2104	14>20	50>72	13>20		1/2K × 24	1/4K × 16	No	No	68	\$ 7.00		2050
ADSP-2105	14>20	50>72	10>20		1/2K × 24	1K × 16	No	No	68	\$ 9.90		1966
ADSP-2111	10>24	50>100	10>20		2K × 24	1K × 16	Yes	No	100	\$43.00		1966
ADSP-2115	17>25	60	17>40		1K × 24	1/2K × 16	No	No	68/80	\$12.00		1966
ADSP-2171	26>33	30>38	13>17		2K × 24	2K × 16	Yes	No	128	\$31.50		1869
ADSP-2173	20	50	10.24		2K × 24	2K × 16	Yes	Yes	128	\$36.23		1869

## ROM-Based

ADSP-2109	14>20	50>72	13>20	4K × 24	1/4K × 16	No	No	No	68	CF		
ADSP-2161	16.67	60	16.67	8K × 24	1/2K × 16	No	No	No	68/80	CF	10,000 Min Order	2050
ADSP-2162	10.24	100	10.24	8K × 24	1/2K × 16	No	No	Yes	68/80	CF	10,000 Min Order	1966
ADSP-2163	16.67>25	40>60	16.67	4K × 24	1/2K × 16	No	No	No	68/80	CF	10,000 Min Order	1966
ADSP-2164	10.24	100	10.24	4K × 24	1/2K × 16	No	No	Yes	68/80	CF	10,000 Min Order	1966
ADSP-2165	20	50	20	12K × 24	4K × 16	Yes	Yes	No	68/80	CF	10,000 Min Order	1966
ADSP-2166	16.67	60	16.67	12K × 24	4K × 16	Yes	Yes	Yes	68/80	CF	10,000 Min Order	1966

## Large On-Chip Memory

ADSP-2181	29>40	25>35	14>20	16K × 24	16K × 16	DMA	No	No	128	\$41.40		1928
ADSP-2183	52	30>35	14>17	16K × 24	16K × 16	DMA	Yes	Yes	128	\$51.23		1927
ADSP-2185	29>33	30>35	14>17	16K × 24	16K × 16	DMA	No	No	100	\$38.70		2073
ADSP-2185L	29>33	30>35	14>17	16K × 24	16K × 16	DMA	Yes	Yes	100	\$42.50		2073
ADSP-2186	29>33	30>35	14>17	8K × 24	8K × 16	DMA	No	No	100	\$28.00		2074
ADSP-2186L	29>33	30>35	14>17	8K × 24	8K × 16	DMA	Yes	Yes	100	\$26.19		2074
ADSP-2187L	29>40	25>35	14>20	32K × 24	32K × 24	DMA	Yes	Yes	100	\$TBD	Overlay DM and PM	2185



# DIGITAL SIGNAL PROCESSING

## Mixed Signal Processors

With Onboard Telecom Codec, 16 Bits

Model	MIPS	Cycle Time ns	CLK IN MHz	Program		Data RAM	Host Port	V <sub>CC</sub> +3.3 V	# Pins	Lowest Grade Price 100s	Comments	Fax-code
				RAM	ROM							
ADSP-21msp58	26	38	13	2K × 24		2K × 16	Yes	No	100	\$ 44.00		1901
ADSP-21msp59	26	38	13	2K × 24	4K × 24	2K × 16	Yes	No	100	\$ CF		1901

## Floating-Point

Model	MFLOPS	Cycle Time ns	CLK IN MHz	Program		Data RAM	Host Port	V <sub>CC</sub> +3.3 V	# Pins	Grade Price 100s	Comments	Fax-code
				RAM	ROM							
ADSP-21061L	120	25>30	33>40	10K × 48		16K × 32	Yes	Yes	240	\$ 39.00	+3.3 V, Low Cost ADSP-21061	2365
ADSP-21062L	120	25>30	33>40	10K × 48		16K × 32	Yes	Yes	240	\$112.00	+3.3 V, Low Cost ADSP-21062	1870
ADSP-21020	20>33	30	20>33	0K		0K	No	No	223	\$106.00	32 Location Cache Memory	1490
Typical Memory Configuration												
ADSP-21060	120	25>30	33>40	40K × 48		64K × 32	Yes	No	240	\$326.00	Memory Is Configurable, 4M Total	1882
ADSP-21062	120	25>30	33>40	20K × 48		32K × 32	Yes	No	240	\$207.00	Memory Is Configurable, 2M Total	1870
ADSP-21061	120	25>30	33>40	10K × 48		16K × 32	Yes	No	240	\$ 86.00	Memory Is Configurable, 1M Total	2154
AD14060	480	25	40	160K × 48		256K × 32	Yes	No	308	\$ CF	Quad ADSP-21060, Single Package	2132
AD14060L	480	25	40	160K × 48		256K × 32	Yes	Yes	308	\$ CF	Quad ADSP-21060, Single Package	2132
AD14160	480	25	40	160K × 48		256K × 32	Yes	No	452	\$ CF	Low Cost	2453
AD14160L	480	25	40	160K × 48		256K × 32	Yes	Yes	452	\$ CF	Low Cost	2453



# DIGITAL SIGNAL PROCESSING

## Tools

Model	Product Description	Unit Price	Fax-code
ADDS-21xx-SW-PC	IBM-PC* version for the ADSP-21xx Fixed Point Family. Includes Assembler, Linker, Simulator, Prom Splitter and C Tools. Tools include: C Compiler, Runtime Library and C Source-Level Debugger.	\$ 395.00	1487
ADDS-21xx-SW-SUN	SUN4 version of Development Software and C Tools.	\$ 495.00	1487
ADDS-210xx-SW-PC	IBM-PC version for the ADSP-210xx Floating Point Family. Includes Assembler, Linker, Simulator, Prom Splitter and C Tools. Tools include: C Compiler, Runtime Library and C Source-Level Debugger.	\$ 995.00	2010
ADDS-210xx-SW-SUN	SUN4 version of Development Software plus the C Tools.	\$1295.00	2010

## Hardware

ADDS-2101-EZ-KIT	ADSP-2101 / ADSP-2105 low cost development package. Includes IBM PC Development Software and evaluation board.	\$ 499.00	1919
ADDS-2111-EZ-KIT	ADSP-2111 low cost development package. Includes IBM PC Development Software and evaluation board.	\$ 499.00	1919
ADDS-2101-EZ-LAB	ADSP-2101 (EZ-LAB) evaluation board.	\$ 295.00	1919
ADDS-2111-EZ-LAB	ADSP-2111 evaluation board.	\$ 395.00	1919
ADDS-2171-EZ-LAB	ADSP-2171 evaluation board.	\$ 695.00	1919
ADDS-21020-EZ-LAB	ADSP-21020 evaluation board.	\$ 795.00	1919
ADDS-2106x-EZ-LAB	ADSP-21060 / ADSP-21062 evaluation board.	\$1495.00	1490
ADDS-2101-EZ-ICE	ADSP-2101 low cost compact (EZ-ICE) in-circuit emulator.	\$1495.00	2010
ADDS-2111-EZ-ICE	ADSP-2111 low cost compact in-circuit emulator.	\$1995.00	1919
ADDS-2171-EZ-ICE	ADSP-2171 in-circuit emulator.	\$1995.00	1919
ADDS-2181-EZ-ICE	ADSP-2181 in-circuit emulator.	\$1995.00	1919
ADDS-21020-EZ-ICE	ADSP-21020 low cost compact in-circuit emulator.	\$2795.00	1490
ADDS-2106x-EZ-ICE	ADSP-21060 / ADSP-21062 in-circuit emulator.	\$2795.00	2010
ADDS-21xx-EZLITE	ADSP-2181 low cost demo/evaluation board.	\$ 89.00	1487
ADDS-21020-EZ-KIT-PL	ADSP-21020 / ADSP-21010 low cost development package. IBM PC Development SWare, C Compiler, and eval board.	\$1295.00	2010

## Training Courses

ADDS-21xx-WKSHP	ADSP-2100 Family 3-Day Workshop. Offered in Norwood, Massachusetts; California; Georgia; Europe.	\$ 975.00	1487
ADDS-210xx-WKSHP	ADSP-21000 Family 3-Day Workshop. Offered in Norwood, Massachusetts; California; Georgia; Europe.	\$ 975.00	2010

\*IBM PC is a trademark of International Business Machines Corporation.



## μComputer (8051-Based)

Model	V <sub>ss</sub> Volts	I <sub>DD</sub> Active mA	I <sub>DD</sub> Idle mA	Sleep μA	A/D 12 Bit kSPS	Program Flash EEPROM Bytes	Data Flash EEPROM Bytes	# Pins	Lowest Grade Price 100s	Comments	Fax- code
ADμC812	+3 V	TBD	TBD	60	200	8K	640	44/52	\$TBD	w/Dual 10-Bit D/A	2194

Model Number	Description	Lowest Grade Price 100s	Fax- code
--------------	-------------	----------------------------------	--------------

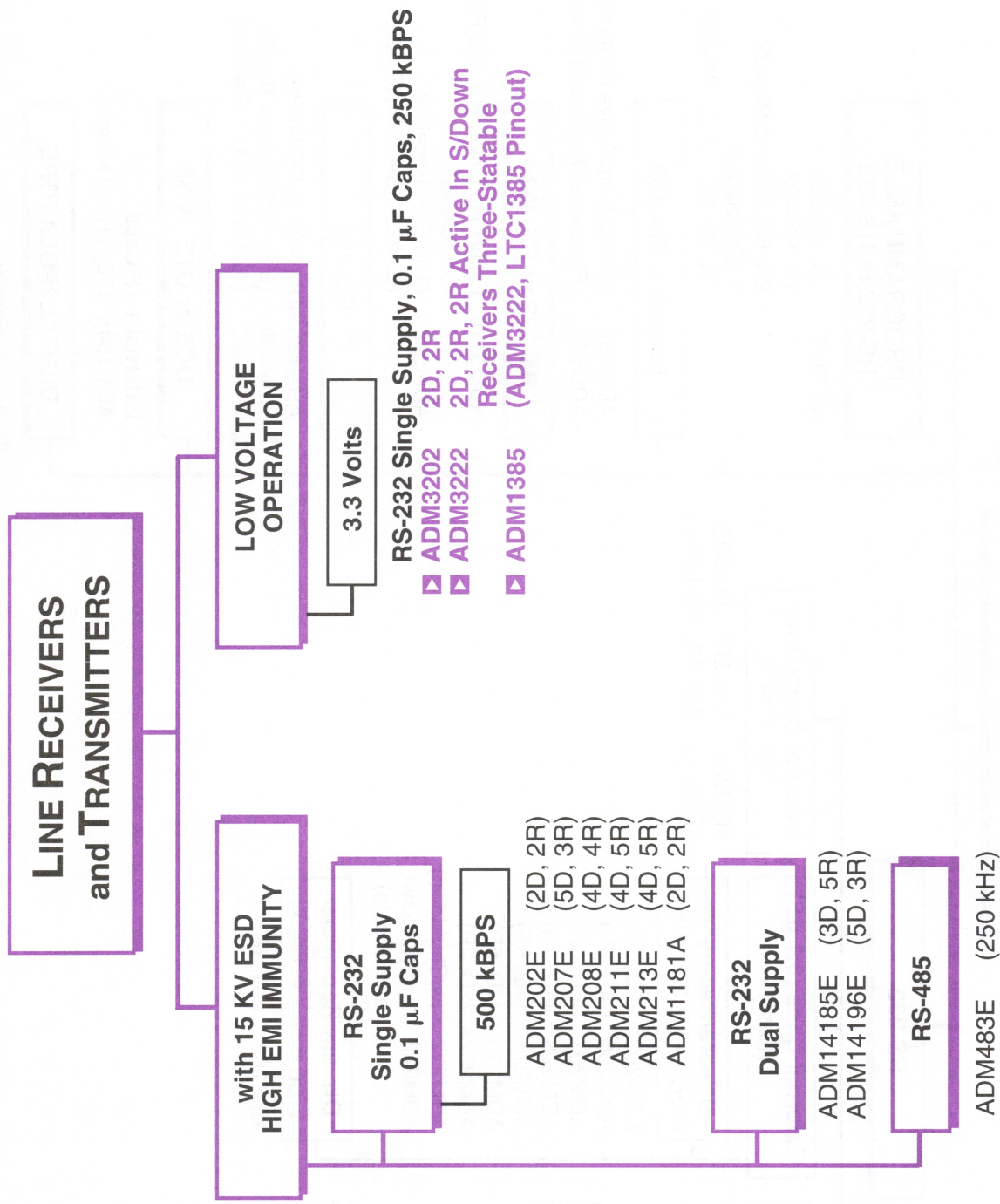
## Chipsets

▶ ADSST-NAV2000	Chipset for GPS Receiver, SHARC-Based (Glossy)	CF	2219
▶ ADSST-NAV2100	Chipset for GPS Receiver, 2 ADSP-2181+SRAM (Glossy)	CF	2220
▶ ADSST-G723.1	Speech Compression G.723.1 (Glossy)	CF	2221
▶ ADSST-G728	Speech Compression G.728 (Glossy)	CF	2234
▶ ADSST-G729	Speech Compression G.729 (Glossy)	CF	2235
▶ ADSST-MPEG1000	MPEG I Coder and Decoder Chipset	CF	2215
▶ ADSST-MPEG2000	MPEG-II Chipset	CF	2216
▶ AD20msp910	ADSL Chipset, AD6435 Modem Interface, AD6436 DMT Co-Processor, AD6437 Analog Front End, AD816 Line Driver and Receiver, ADSP-2183 Fixed Point DSP	CF	2177
AD20msp400HF	Noise and Echo Cancellation for Mobile Phones (Glossy) ASSP2176+AD1845 (Glossy)	CF	2232
AD20msp410	GSM Baseband Processing Chip Set: ALG (Algorithm Signal Processor = ASCIC Variant of ADSP2176 and ADSP-2178, AD-PLP01, Physically Layer Processor = ASCIC +H8300H μ/Controller, BBC, Baseband Converter AD7115	CF	1920
AD20msp415	GSM Baseband Processing Chipset: AD6421+AD6422, Comes with Layer S/WARD, also Available Object Code and License for Layers 2 and 3 of the Protocol Stack and User Interface Development System	CF	2041

## Reference

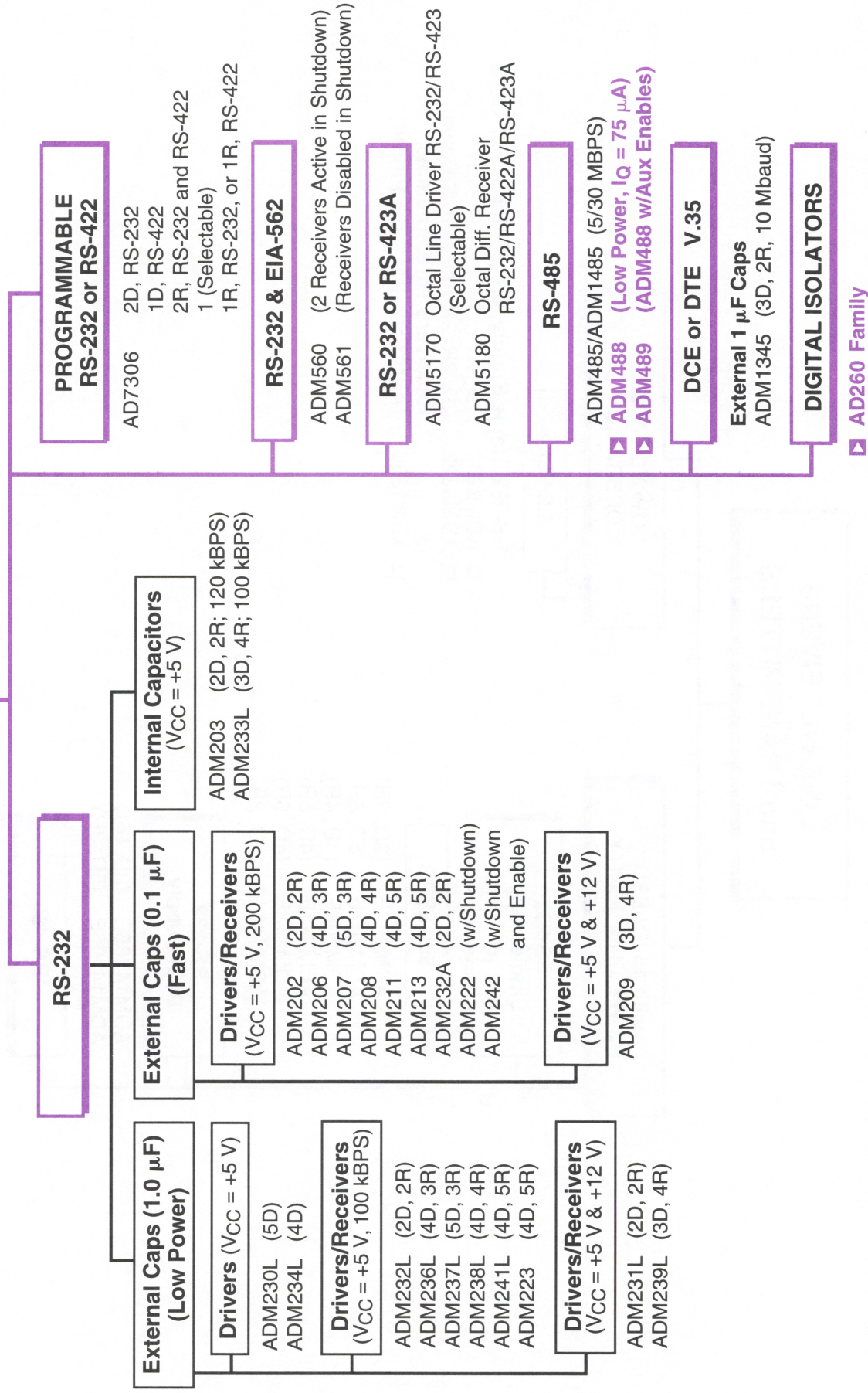
▶ ADSST-DAM1000	ADAM-200, Reference Design for an Answering Machine (Glossy)	CF	2212
▶ ADSST-VC2000	Reference Design for Video Phone, ADSP-21061 Based for Video, Audio ADSP-2181+AD1843	CF	2217
▶ ADSST-VC3000	Reference Design for Video Phone, Host Based for Video Audio ADSP-2181+AD1843	CF	2233
▶ ADSST-MOD2000	V.34 Data Pump Reference Design, ADSP-2181+AD1843+Modem License (Glossy)	CF	2222
▶ ADSST-MOD2010	V.34 Data Pump Reference Design, ADSP-2181+Modem License (Glossy)	CF	2223
▶ ADSST-EM1000	Reference Design for a Single Phase Power Meter and Harmonic Analyzer (Glossy)	CF	2214
▶ ADSST-EM3000	Reference Design for a Three Phase Power Meter and Harmonic Analyzer (Glossy)	CF	2218







## LINE RECEIVERS and TRANSMITTERS



▶ = New Product since 1997 Short Form Designers' Guide.



## Line Receivers & Transmitters, 15 kV ESD, High EMI Immunity

Model	Power Supply Volts	# Drivers	# Receivers	kBPS Min	Ext Cap	Shutdown SD	# RCV Active	Three-State Enable EN	# Pins N/R	Lowest Grade Price 100s	Comments	Fax-code
<b>RS-232 Single Supply</b>												
ADM207E	+5	5	3	500	4/0.1 $\mu$ F	No	0	No	24	\$2.30		1991
ADM208E	+5	4	4	500	4/0.1 $\mu$ F	No	0	No	24	\$2.30		1991
ADM211E	+5	4	5	500	4/0.1 $\mu$ F	SD	0	EN	28	\$2.30		1991
ADM213E	+5	4	5	500	4/0.1 $\mu$ F	SD	2	EN	28	\$2.30		1991
ADM202E	+5	2	2	500	4/0.1 $\mu$ F	No	0	No	16	\$1.50		1992
ADM1181A	+5	2	2	230	4/0.1 $\mu$ F	No	0	No	16	\$1.50	LTC Pinout	1992

### RS-232C Dual Supply

ADM14185E	$\pm 12$	3	5	20/120	0	No	0	No	20	\$TBD	Superior Industry Standard	2190
ADM14196E	$\pm 12$	5	3	20/120	0	No	0	No	20	\$TBD	Superior Industry Standard	2208

### RS-485

ADM483E	+5	1	1	250	0	No	0	No	8	\$1.30		2094
---------	----	---	---	-----	---	----	---	----	---	--------	--	------

## Line Receivers & Transmitters, Low Voltage Operation

Model	Power Supply Volts	# Drivers	# Receivers	kBPS Min	Ext Cap	Shutdown SD	# RCV Active	Three-State Enable EN	# Pins N/R	Lowest Grade Price 100s	Comments	Fax-code
<b>RS-232 Single Supply</b>												
ADM3202	+3.3	2	2	230	4/0.1 $\mu$ F	Yes	0	No	16	\$1.50	1 $\mu$ A in Shutdown	2146
ADM3222	+3.3	2	2	230	4/0.1 $\mu$ F	Yes	2	No	18/20	\$1.50		2146
ADM1385	+3.3	2	2	230	4/0.1 $\mu$ F	Yes	2	No	20	\$1.50	LTC1385 Pinout	2146

### RS-485 Transceiver

ADM3491	+3.1	1	1	10,000	0	No	0	No	14/16	\$1.50	32 Transceivers on Bus	2424
---------	------	---	---	--------	---	----	---	----	-------	--------	------------------------	------



## Line Receivers & Transmitters

Model	Power Supply #1		# Drivers	# Receivers	kBPS Min	Ext Cap	Shutdown SD	# RCV Active	Three-State Enable EN	# Pins N/R	Lowest Grade Price 100s	Comments	Fax-code
	Volts												
RS-232 Low Power, 1.0 μF Caps													
ADM230L	+5	5	5	0	100	4/0.1 μF	SD	0	No	20	\$2.92		1540
ADM231L	+5	2	2	2	100	2/0.1 μF	No	0	No	14/16	\$1.89	P/S # 2, +7.5 V to +13.2 V	1540
ADM232L	+5	2	2	2	100	4/0.1 μF	No	0	No	16	\$1.89		1540
ADM234L	+5	4	4	0	100	4/0.1 μF	No	0	No	16	\$2.27		1540
ADM236L	+5	4	4	3	100	4/0.1 μF	SD	0	EN	24	\$2.92		1540
ADM237L	+5	5	5	3	100	4/0.1 μF	No	0	No	24	\$2.92		1540
ADM238L	+5	4	4	4	100	4/0.1 μF	No	0	No	24	\$3.49		1540
ADM239L	+5	3	3	5	100	2/0.1 μF	No	0	EN	24	\$3.49	P/S # 2, +7.5 V to +13.2 V	1540
ADM241L	+5	4	4	5	100	4/0.1 μF	SD	0	EN	28	\$2.92		1540

## RS-232 Fast, 0.1 $\mu$ F Caps

ADM202	+5	2	2	2	200	4/0.1 $\mu$ F	No	0	No	16	\$1.54		1528
ADM206	+5	4	4	3	200	4/0.1 $\mu$ F	SD	0	$\overline{EN}$	24	\$2.51		1530
ADM207	+5	5	5	3	200	4/0.1 $\mu$ F	No	0	No	24	\$2.51		1530
ADM208	+5	4	4	4	200	4/0.1 $\mu$ F	No	0	No	24	\$2.51		1530
ADM209	+5	3	3	5	200	2/0.1 $\mu$ F	No	0	$\overline{EN}$	24	\$2.64	P/S # 2, +9 V to +13.2 V	1530
ADM211	+5	4	4	5	200	4/0.1 $\mu$ F	SD	0	$\overline{EN}$	28	\$2.04		1530
ADM213	+5	4	4	5	200	4/0.1 $\mu$ F	$\overline{SD}$	2	EN	28	\$2.51		1530
ADM222	+5	2	2	2	200	4/0.1 $\mu$ F	SD	0	No	18	\$1.92		1539
ADM223	+5	4	4	5	100	4/0.1 $\mu$ F	SD	2	$\overline{EN}$	28	\$2.04		1540
ADM232A	+5	2	2	2	200	4/0.1 $\mu$ F	No	0	No	16	\$1.92		1539
ADM242	+5	2	2	2	200	4/0.1 $\mu$ F	SD	0	$\overline{EN}$	18	\$1.92		1539

## RS-232 Internal Caps

ADM203	+5	2	2	2	120	0	No	0	No	20	\$3.04	No Capacitors Required	1528
ADM233L	+5	2	2	2	120	0	SD	0	No	20	\$3.53	No Capacitors Required	1540



## Line Receivers and Transmitters

Model	Power Supply Volts	# DRV	# RCV	kBPS Min	Ext Cap	Shutdown SD	# RCV Active	Three State Enable EN	# Pins N/R	Lowest Grade Price 100s	Comments	Fax-code
AD7306	+5	1/1	2/1	100	4/0.1 $\mu$ F	No	0	No	24	\$ 6.88	Configured as RS-232	1273
AD7306	+5	1/1	1/2	5000	4/0.1 $\mu$ F	No	0	No	24	\$ 6.88	Configured as RS-422	1273

## Programmable, RS-232 and RS-422

## RS-232 or RS-423A, Mode Control, Programmable Slew Rate

ADM5170	$\pm$ 10	8	0	116	NA	Yes	0	EN	28	\$ 3.59		1554
ADM5180	+5	0	8	200	NA	Yes	0	Fail-Safe Function	28	\$ 3.59		1555

## RS-232 &amp; EIA-562

ADM560	+3.3	4	5	116	4/0.1 $\mu$ F	Yes	2	EN	28	\$ 2.40		1556
ADM561	+3.3	4	5	116	4/0.1 $\mu$ F	Yes	0	EN	28	\$ 2.40		1556

## RS-485

ADM485	+5	1	1	5000	NA	No	0	No	8	\$ 1.84	I <sub>G</sub> ENABLE = 2.2 mA	1553
ADM1485	+5	1	1	30000	NA	No	0	No	8	\$ 2.30	I <sub>G</sub> ENABLE = 2.2 mA	1527
▶ ADM488	+5	1	1	250	NA	No	0	No	8	\$ 1.25	I <sub>G</sub> ENABLE = 0.06 mA	2179
▶ ADM489	+5	1	1	250	NA	No	0	No	16	\$ 1.25	ADM488 w/Aux Enable	2179

## V.35

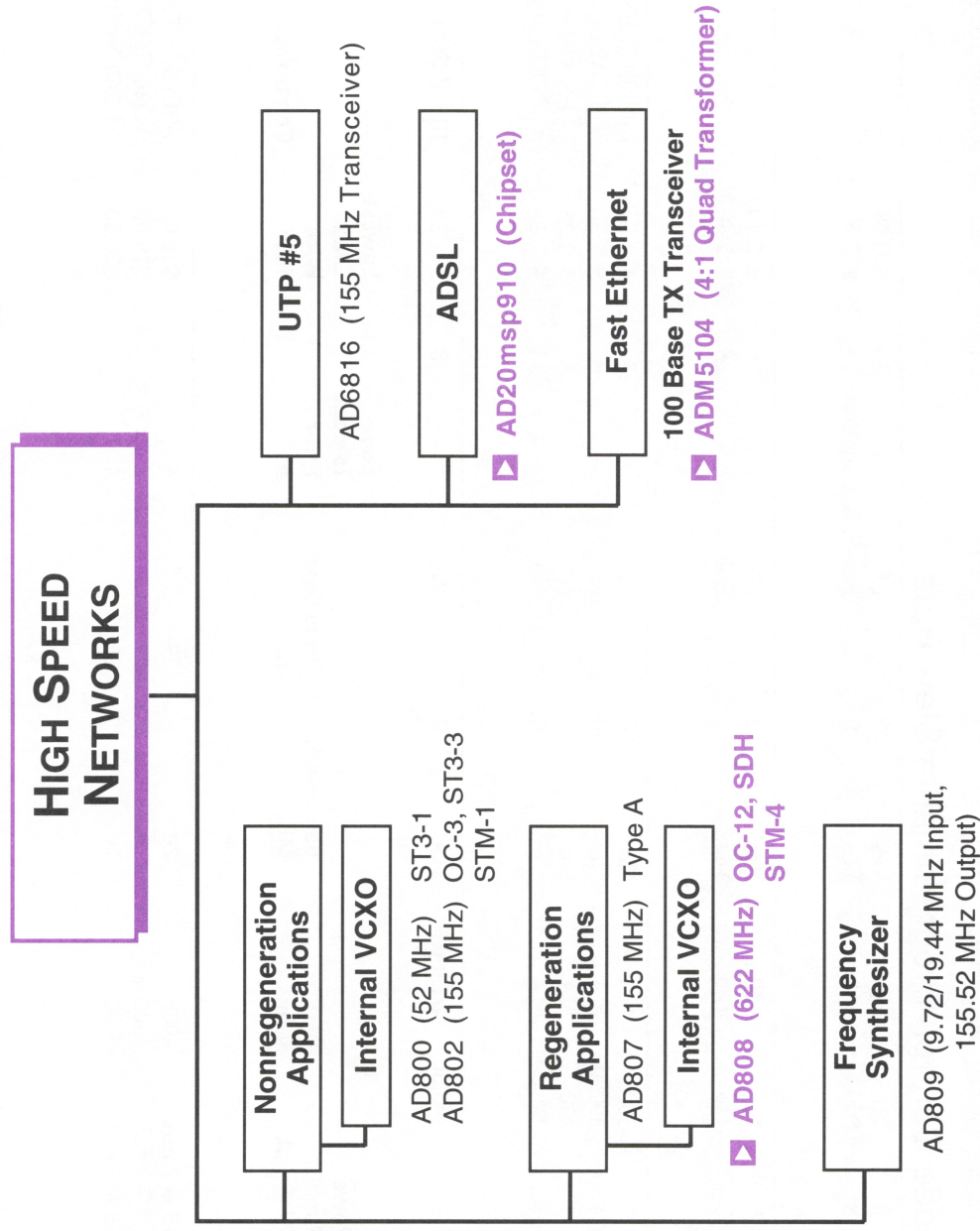
▶ ADM1345	+5	3	3	10,000	4/1.0 $\mu$ F	Yes	0	Yes	28	\$ 4.29	10 kV ESD	2183
-----------	----	---	---	--------	---------------	-----	---	-----	----	---------	-----------	------

Model	# Channels	Power Supply +V @ mA	CMV V rms	Bandwidth MHz	Time Delay ns	Edge-to-Edge Error ns	Lowest Grade Price 100s	Comments	Fax-code
-------	------------	----------------------	-----------	---------------	---------------	-----------------------	-------------------------	----------	----------

## Digital Isolators

▶ AD260	+5	+5 @ 7 mA	4000	20	29	4	\$20.00	With 3 W Transformer	2107
▶ AD261B	+5	+5 @ 7 mA	4000	20	29	4	\$19.00	AD260 No Transformer	2107
▶ AD261C	+5	+5 @ 7 mA	6000	20	29	4	\$20.00	AD260 No Transformer	2107







## High Speed Networks

Model	Standards Supported	VCO MHz	VCO Int/Ext	Tracking Range MBPS		Received Clock Skew ns		Jitter Tolerance Unit Interval p-p	Lowest Grade Price 100s	Comments	Fax-code
				Min	Max	Min	Max				

### Nonregeneration Applications

AD800-45	DS-3	44.736	Int	43	45.5	0.2	1	0.47 @ 1 MHz	\$36.70	Sonet CLK & Data Recovery	1395
AD800-52	STS-1	51.84	Int	49	53	0.2	1	0.47 @ 20 kHz	\$36.70		1395
AD802-155	STS-3, STM-1	155.52	Int	155	156	0.2	1	NS	\$44.00		1395

### Regeneration Applications

AD803	PONs	20.48	Int	19.1	20.5	1.95	13.6	0.95 @ 10 kHz	\$31.30		1398
AD805	G.958 Type A or B	155.52	Ext	±7.7 kHz		0.2	1.1	0.65 @ 1 MHz	\$45.75		1399
AD807	G.958 Type A	155.52	Int	155	156	NS	NS	0.45 @ 1 MHz	\$23.35	With On-Chip Quantizer	1904
AD6816	ATM/UPT#5	19.44	Ext	(See Data Sheet for Driver/Receiver Specs.)		(See Data Sheet for Driver/Receiver Specs.)		Frequency Synthesizer	\$45.00		2080
AD808	OC-12, SDH STM-4	6.22	Int	(See Data Sheet for Driver/Receiver Specs.)		2° RMS			\$TBD		2414

### Frequency Synthesizer, 9.72 MHz or 19.44 MHz Input

AD809	SDH, SONET	155.52		9.719	9.721	(See Data Sheet for Specs.)			\$18.95	9.719 MHz Mode	1935
AD809	SDH, SONET	155.52		19.44	19.442	(See Data Sheet for Specs.)			\$18.95	19.442 MHz Mode	1935

### UTP #5

AD6816	ATM/UPT#5	19.44	Ext	(See Data Sheet for Driver/Receiver Specs.)					\$45.00	Drive 130m UTP#5	2080
--------	-----------	-------	-----	---	--	--	--	--	---------	------------------	------

### ADSL

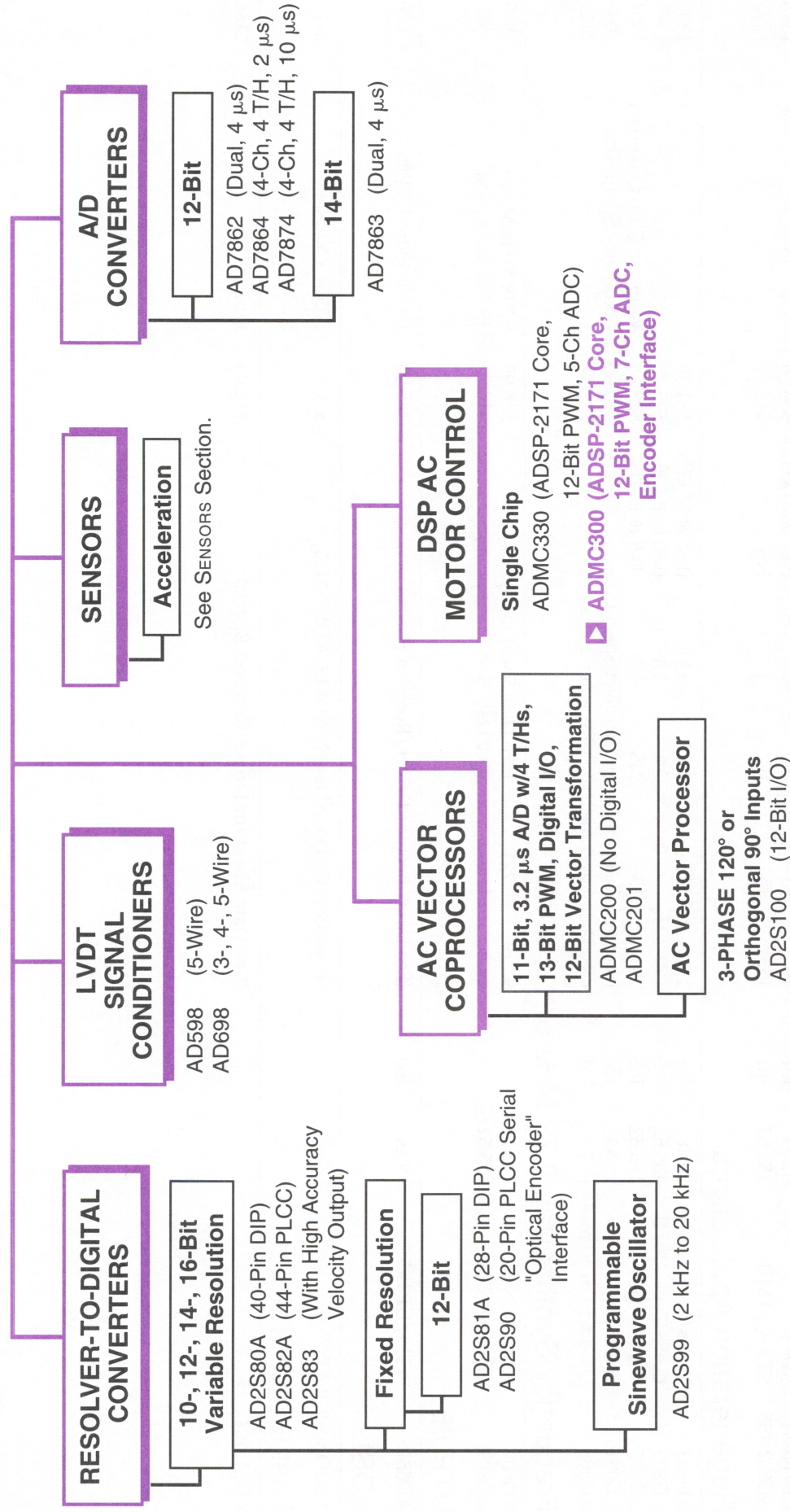
AD20msp910	ADSL			AD6435, AD6436, AD6437, AD815, ADSP-2183		\$ CF		ADSL Chipset	2177		
------------	------	--	--	--	--	-------	--	--------------	------	--	--

### Fast Ethernet

ADM5104			(See Data Sheet for Driver/Receiver Specs.)		\$14.00		Quad		2186		
---------	--	--	---	--	---------	--	------	--	------	--	--



# MOTION CONTROL





## Resolver-to-Digital Converters

Model	Resolution	Accuracy	Max Track RPS	Max Bandwidth	Input Signal Format	Reference Frequency Hz	Velocity Linearity	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD2S80A	10 to 16	±1.3'-8	1040	Selectable	R Only	50 to 20k	±3%	40	\$94.00	Military Grade Available	1118
AD2S81A	12	±30'	260	Selectable	R Only	400 to 20k	±3%	28	\$70.00	Ceramic Only	1119
AD2S90	12	±8' ± 1 LSB	750	10 kHz	R Only	10 kHz	±1.0%	20	\$24.30	Lowest Cost	1122
AD2S82A	10 to 16	±2'-22	1040	Selectable	R Only	50 to 20k	±3%	44	\$43.00	Low Cost	1119
AD2S83	10 to 16	±8'	1040	Selectable	R Only	50 to 20k	±0.25%	44	\$86.90	High ACC VEL Output	1121

## Programmable Sine Wave Oscillator

AD2S99	NA	0.05 to 0.1%				2k to 20k		28	\$ 6.98		1823
--------	----	--------------	--	--	--	-----------	--	----	---------	--	------

## LVDT Signal Conditioners

Model	Transfer Function	Gain Error %	Gain Drift ppm	Excitation Output Voltage V rms	Supply Voltage	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD598	$V_{OUT} = (V_a - V_b) / (V_a + V_b) \times 500 \mu A \times R$	1	50	2.1 to 24	+13 to 36 ± 13 V	24/28	\$20.75	Can Interface to RVDT	1192
AD698	$V_{OUT} = (V_a) / (V_b) \times 500 \mu A \times R$	1	100	2.1 to 24	+13 to 36 ± 13 V	20	\$14.30	4-Wire	1237

## AC Vector Processor

Model	Digital Input Bits	Analog Output	Radius Error %	Angular Error arc min	Supply Voltage	# Pins	Lowest Grade Price 100s	Fax-code
AD2S100	12	2 & 3 Phase	0.7	18	±5 @ 10 mA	44	\$21.55	1110

## AC Vector Coprocessors with 11-Bit A/D, 4 T/H, PWM, 8-Bit Digital I/O

Model	Transfer Function	# Pins	Lowest Grade Price 100s	Comments	Fax-code
ADMC200	See Data Sheet for Feature Set	44	\$15.90	4-Channel Input	1960
ADMC201	See Data Sheet for Feature Set	44	\$17.80	7-Channel Input	1961

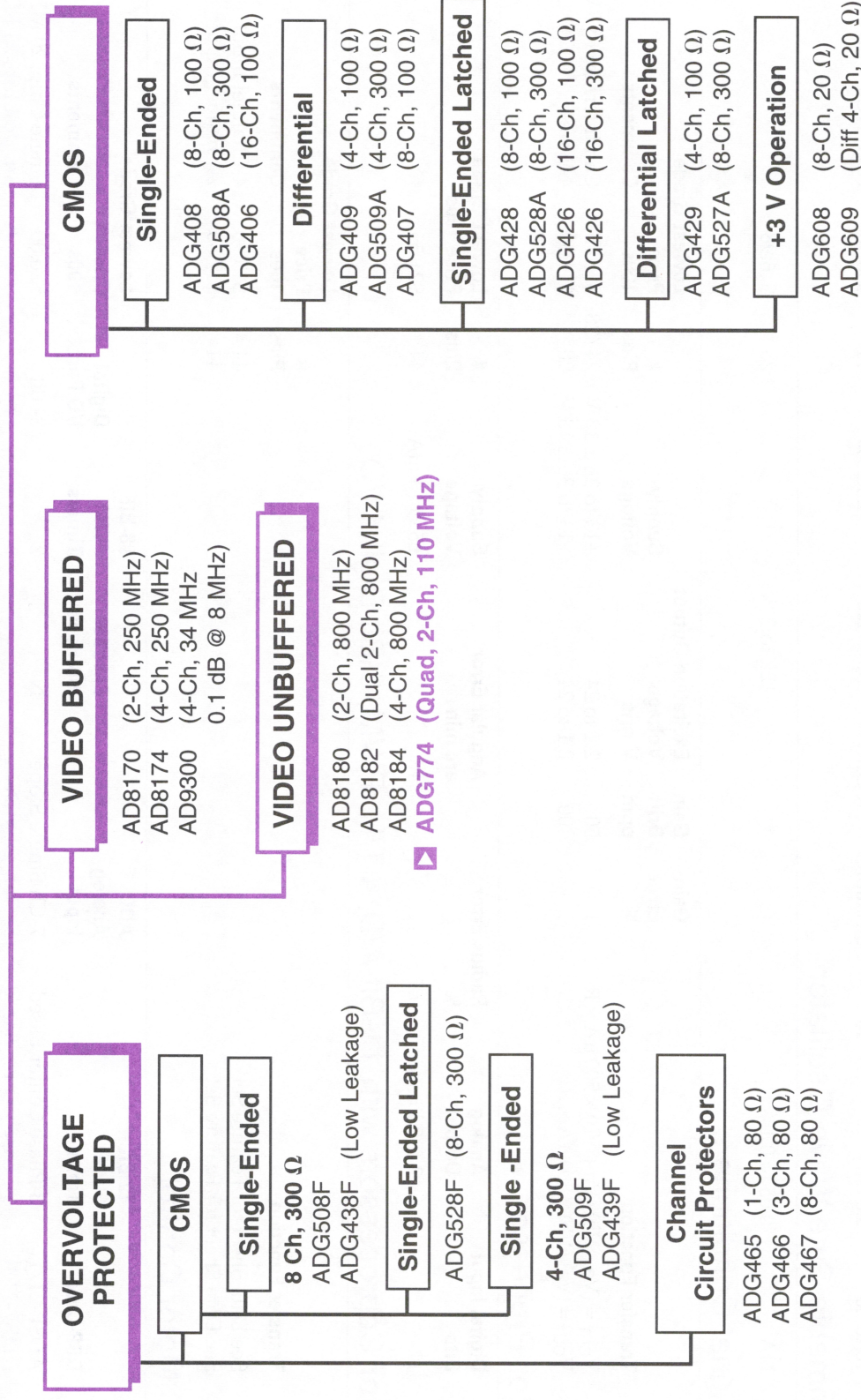
## DSP AC Motor Control

Model	DSP-Core	12-Bit PWM Timer	ADC Analog Input	Encoder Interface	#8-Bit PWM Timers	Digital I/O Port	Lowest Grade Price 100s	Comments	Fax-code
ADMC330	ADSP-2171	3-Phase Center Based	7-Ch Single Slope	N	2	8- Bit	\$20.00	Single Chip, 20 MHz	2126
ADMC300	ADSP-2171	3-Phase Center Based	5-Ch Sigma-Delta	Y	2	12-Bit	\$24.00	Single Chip, 24 MHz	2253

■ = New Product since 1997 Short Form Designers' Guide.



# MULTIPLEXERS





# MULTIPLEXERS

Model	Over Supply Range Volts	R <sub>ON</sub> Ohms	I <sub>s</sub> Off $\pm$ nA	t <sub>ON</sub> +25°C $\mu$ s	Input Latch	# Pins	Lowest Grade Price 100s	Comments	Fax-code
-------	-------------------------	----------------------	-----------------------------	-------------------------------	-------------	--------	-------------------------	----------	----------

## Multiplexers, Dual Supply

### 16-Channel Single-Ended

ADG406	0.3	100	0.5	0.12	No	28	\$6.25		1499
ADG426	0.3	100	0.5	0.12	Yes	28	\$6.65	With Latch and Enable Reset	1499

### 8-Channel Differential

ADG407	0.3	100	0.5	0.12	No	28	\$6.25		1499
--------	-----	-----	-----	------	----	----	--------	--	------

### 8-Channel Single-Ended

ADG408	2	40	0.5	0.09	No	16	\$3.50		1501
ADG428	2	40	0.5	0.09	Yes	18	\$3.70	With Latch and Enable Reset	1508
ADG438F	40	300	0.5	0.25	No	16	\$4.35	With Latch and Enable Reset	1855
ADG508F	20	300	1	0.25	No	16	\$3.95		1845
ADG528F	20	300	1	0.25	Yes	18	\$4.54	With Chip Address/Control	1845
ADG508A	2	500	1	0.25	No	16/20	\$3.95		1518

### 4-Channel Differential

ADG409	2	40	0.5	0.12	No	16	\$3.50		1501
ADG429	2	40	0.5	0.09	Yes	18	\$3.70	With Latch and Enable Reset	1508
ADG439F	40	300	0.5	0.25	No	16	\$4.35		1855
ADG509F	20	300	1	0.25	No	16	\$3.95		1845
ADG509A	2	500	1	0.25	No	16/20	\$3.95		1518

## Multiplexers, Single Supply

### 8-Channel Single-Ended

ADG608	2	40	0.05	0.1	No	16	\$3.85	Specs for +5 V Rail	1912
ADG608	2	90	0.05	0.17	No	16	\$3.85	Specs for +3 V Rail	1912

### 4-Channel Differential

ADG609	2	40	0.05	0.1	No	16	\$3.85	Specs for +5 V Rail	1912
ADG609	2	90	0.05	0.17	No	16	\$3.85	Specs for +3 V Rail	1912



# MULTIPLEXERS

## Video Muxes & Crosspoint Switches

Model	Type	Output Buffer	Rails for Specs	Output Swing Volts	BW Small Signal MHz	Slew Rate V/ $\mu$ s	Crosstalk @ 10 MHz dB	t <sub>OFF</sub> / t <sub>ON</sub> 25°C ns	# of Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>Video Muxes</b>												
AD8170	2:1	Yes	65 V	63.8	100	1000	80	10	8	\$ 2.65		2055
AD8174	4:1	Yes	65 V	63.8	100	1000	80	10	14	\$ 4.65		2055
AD8184	4:1	No	65 V	63.0	750	750	78	11	8	\$ 2.95		2140
AD9300	4:1	Yes	$\pm 12$ V	$\pm 2$	34	170	68	45	16/20	\$ 7.48		1459
AD8182	Dual 2:1	No	65 V	63.0	640	750	80	11	14	\$ 2.95		2045
AD8180	Dual 2:1	No	65 V	63.0	750	750	80	11	8	\$ 1.90		2045
ADG774	Quad 2:1	No	+3.3 to +5 V	0 to V <sub>DD</sub>	110	NA	-75	10/10	16	\$ TBD	Pins w/P15L200	2413

## Crosspoint Switches

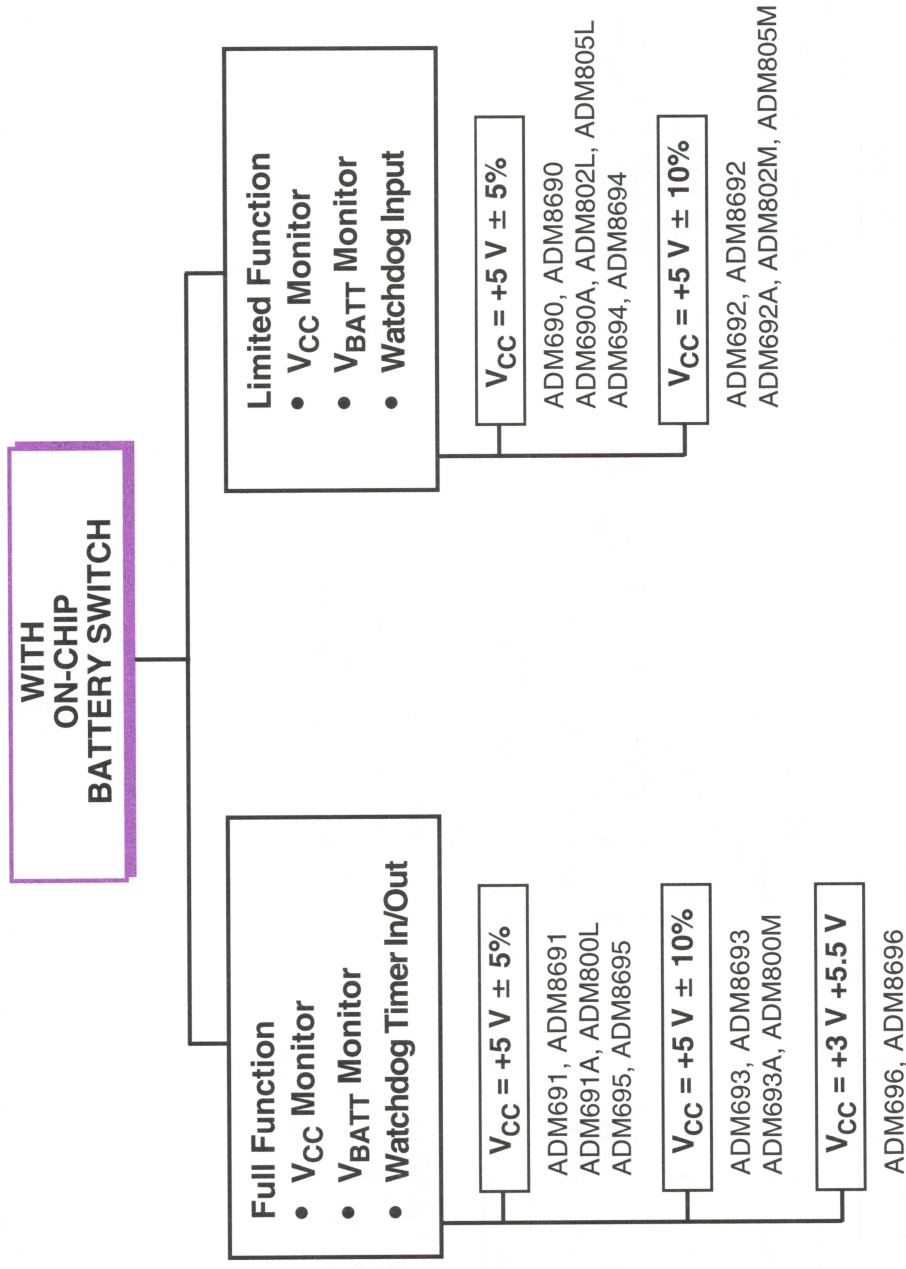
AD8116	16 $\times$ 16	Yes	65 V	62.5	200	300	-66	50	128	\$105.88	Video	2070
AD75019	16 $\times$ 16	No	$\pm 12$ V	$\pm 12$	20	NS	69 dB @ 20 kHz	NS	44	\$ 15.00	Audio	1286
AD8108	8 $\times$ 8	Yes A <sub>V</sub> = 1	$\pm 5$ V	$\pm 2.5$	350	400	76	25	80	\$ 23.53	Video	2191
AD8109	8 $\times$ 8	Yes A <sub>V</sub> = 2	$\pm 5$ V	$\pm 2.5$	200	480	76	25	80	\$ 23.53	Video	2191
AD8110	16 $\times$ 8	Yes A <sub>V</sub> = 1	$\pm 5$ V	$\pm 2.5$	300	500	68	25	80	\$ 44.12	Video	2436
AD8111	16 $\times$ 8	Yes A <sub>V</sub> = 2	$\pm 5$ V	$\pm 2.5$	190	500	68	25	80	\$ 42.12	Video	2436

## Channel Protectors

Model	# Channels	V <sub>SS</sub> Volts	I <sub>SS</sub> $\mu$ A	Over Volt Range Volts V <sub>DD</sub> = V <sub>SS</sub> = 15 V	Over Volt Range Volts V <sub>DD</sub> = V <sub>SS</sub> = 0 V	R <sub>ON</sub> 25°C Ohms	I <sub>S</sub> On 25°C $\pm$ nA	I <sub>O</sub> (out) Off 25°C $\pm$ nA	# of Pins	Lowest Grade Price 100s	Comments	Fax-code
ADG466	3	615	8	20	35	80	1	1	8	\$ 1.60		2067
ADG467	3	615	8	20	35	95	1	1	8	\$ 1.60		2067
ADG465	1	615	5	20	35	80	1	1	6	\$ 1.00		2066

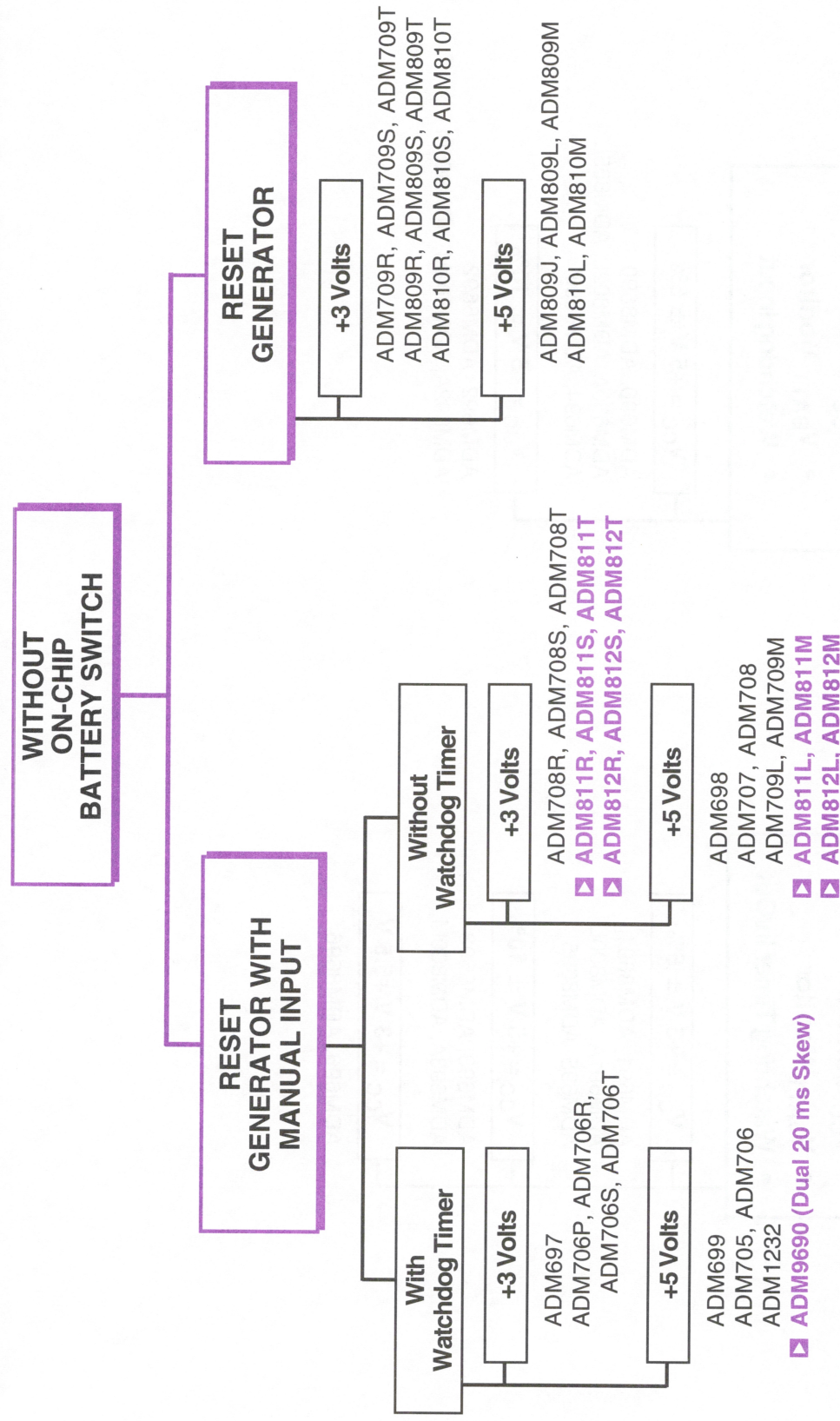


# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS





# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS





# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

## FUNCTION TABLE

With On-Chip  $V_{BATT}$  Switch

Circuit Functions	ADM8690 ADM690	ADM8691 ADM691	ADM8692 ADM692	ADM8693 ADM693	ADM8694 ADM694	ADM8995 ADM695	ADM8696 ADM696	ADM805L ADM802L ADM690A	ADM800L ADM691A	ADM805M ADM802M ADM692A	ADM800M ADM693A
Fixed Power Up/Down Reset	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Variable Power Up/Down Reset							✓				
Watchdog Timer Input	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Watchdog Timer Output		✓		✓		✓	✓		✓		✓
Power Failing Warning In/Out	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reset & Reset Outputs		✓		✓		✓	✓		✓		✓
+3 V Systems											
$\overline{CE}$ In & $\overline{CE}$ Out		✓		✓	✓	✓			✓		✓
Reset & Watchdog Timebase		✓		✓		✓	✓		✓		✓
# of Pins	8	16	8	16	8	16	16	8	16	8	16
Low $I_Q = 100 \mu A$								✓	✓	✓	✓
Low Line Output		✓		✓		✓	✓		✓		✓

\*SOT-23-3 Leads



# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

## FUNCTION TABLE

Without On-Chip V<sub>BATT</sub> Switch

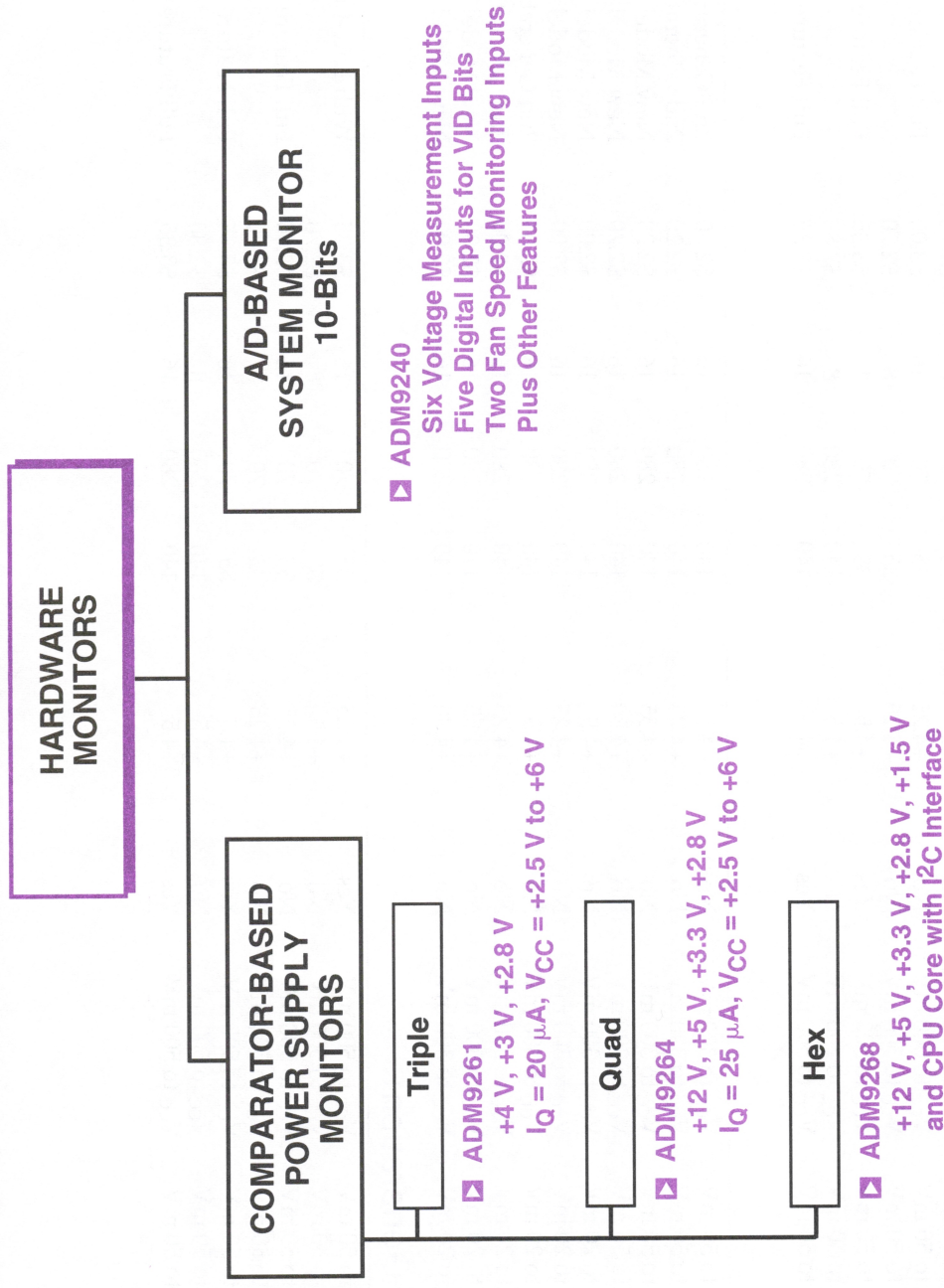
Circuit Functions	ADM8697 ADM697	ADM698	ADM699	ADM705	ADM706	ADM707	ADM708	ADM810* ADM809* ADM709	ADM9680	ADM1232 ADM1232LP	ADM811 ADM812
Fixed Power Up/Down Reset	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Variable Power Up/Down Reset	✓										
Low Line Output	✓										
Watchdog Timer Input	✓		✓	✓	✓				✓	✓	✓
Watchdog Timer Output	✓		✓	✓	✓						
Power Failing Warning In/Out	✓			✓	✓	✓	✓				
Reset & Watchdog Timebase	✓			✓	✓				✓		
Manual Reset				✓	✓	✓	✓			✓	✓
+3 V Systems	✓				P, R, S, T		R, S, T	R, S, T			R, S, T
CE Out	✓										
# of Pins	16	8/16	16	8	8	8	8	3/8	8	8/16	4
Reset & Reset Outputs			✓			✓			✓		

\*SOT-23-3 Leads

▶ = New Product since 1997 Short Form Designers' Guide.



# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS



▶ = New Product since 1997 Short Form Designers' Guide.



# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

Model	V <sub>CC</sub> Range Min	Battery Switch Mode		V <sub>BB</sub> Indicator	Reset Generator Threshold Min Volts	Reset Timeout Delay ms		# Pins	Lowest Grade Price 100s	Comments	Fax- code
		V <sub>OUT</sub> @ I <sub>OUT</sub> = 1 mA Min	V <sub>CC</sub> Mode V <sub>OUT</sub> @ I <sub>OUT</sub> = 100 mA Min			Min	Max				

## With On-Chip V<sub>BATT</sub> Switch I<sub>OUT</sub> = 100 mA

ADM696	+3	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+1.25	35	70	16	\$3.35	With Low-Line Input	1568
ADM690	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.5	35	70	8	\$2.70		1562
ADM691	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.25	35	70	16	\$3.00	Full Feature Set	1562
ADM692	+4.5	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.25	35	70	8	\$2.70		1562
ADM693	+4.5	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+4.5	35	70	16	\$3.35	Full Feature Set	1562
ADM694	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.5	140	280	8	\$2.80		1562
ADM695	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+4.5	140	280	16	\$3.35	Full Feature Set	1562

## I<sub>OUT</sub> = 250 mA

ADM691A	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 300 mV	No	+4.5	140	280	16	\$2.00	2nd Generation ADM691	2078
ADM693A	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 300 mV	No	+4.25	140	280	16	\$2.20	2nd Generation ADM693	2078
ADM800L	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 300 mV	No	+4.55	140	280	16	\$2.20	New Model	2078
ADM800M	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 300 mV	No	+4.30	140	280	16	\$2.20	New Model	2078
ADM805L	+4.75	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.5	140	280	16	\$2.00	New Model	2077
ADM805M	+4.5	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.25	140	280	16	\$2.00	New Model	2077
ADM690A	+4.75	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.5	140	280	16	\$2.00	2nd Generation ADM690	2077
ADM692A	+4.5	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.25	140	280	16	\$2.00	2nd Generation ADM691	2077
ADM802L	+4.75	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.55	140	280	16	\$2.00	New Model	2077
ADM802M	+4.5	V <sub>CC</sub> to 20 mV	V <sub>CC</sub> to 300 mV	No	+4.30	140	280	16	\$2.00	New Model	2077

## I<sub>OUT</sub> = 250 mA (3rd Generation)

ADM8696	+3	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+1.25	35	70	16	\$3.35	With Low-Line Input	2145
ADM8690	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.5	35	70	8	\$2.70		2144
ADM8691	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.25	35	70	16	\$3.00	Full Feature Set	2144
ADM8692	+4.5	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.25	35	70	8	\$2.70		2144
ADM8693	+4.5	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+4.5	35	70	16	\$3.35	Full Feature Set	2144
ADM8694	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	No	+4.5	140	280	8	\$2.80		2144
ADM8695	+4.75	V <sub>CC</sub> to 50 mV	V <sub>CC</sub> to 500 mV	Yes	+4.5	140	280	16	\$3.35	Full Feature Set	2144



# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

## Reset Generators with Manual Input

Model	Reset Generator Threshold		Power Fail Indicator	Power Fail Threshold		RESET or $\overline{\text{RESET}}$	Manual Reset		Reset Timeout Delay		Watchdog Timeout		Lowest Grade Price	# Pins	Comments	Fax-code
	Min	Max		Min	Max		Reset	Volts	Min	Max	Min/Long	Max/Short				
ADM706P	+2.55	+2.7	Yes	1.2/1.3	1.2/1.3	R	Yes	160	160	280	1/2.25		\$2.03	8		1866
ADM706R	+2.55	+2.7	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	160	280	1/2.25		\$2.03	8		1866
ADM706S	+2.85	+3.	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	160	280	1/2.25		\$2.03	8		1866
ADM706T	+3.	+3.15	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	160	280	1/2.25		\$2.03	8		1866

## +3.0 V Circuits with Watchdog Timer

## +5.0 V Circuits with Watchdog Timer

### ADM9690 Voltage Monitor with Dual Reset Outputs Offset by 12.5 ms

ADM9690	+4.3	+5.5							35	70	Pin Prgm 0.75, 1.5, 12.5, 25 $\mu\text{s}$	\$TBD	Dual Reset Outputs	2189
---------	------	------	--	--	--	--	--	--	----	----	--	-------	--------------------	------

### ADM1232 Reset Levels Pin Programmable

ADM1232	+4.5	+4.74	No	No		R & $\overline{\text{R}}$	Yes	250	1000		0.04	0.175	\$TBD	8	Reset Level = GND	2194
ADM1232	+4.25	+4.49	No	No		R & $\overline{\text{R}}$	Yes	250	1000		0.04	0.175	\$TBD	8	Reset Level = $V_{CC}$	2194
ADM705	+4.5	+4.75	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	280		1/2.25		\$1.21	8		1865
ADM706	+4.25	+4.5	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	280		1/2.25		\$2.03	8		1865

## +3.0 V Circuits without Watchdog Timer

ADM708R	+2.55	+2.7	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	280				\$1.05	8		1866
ADM708S	+2.85	+3.	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	280				\$1.05	8		1866
ADM708T	+3.	+3.15	Yes	1.2/1.3	1.2/1.3	$\overline{\text{R}}$	Yes	160	280				\$1.05	8		1866
ADM811S	+2.89	+2.96	No			$\overline{\text{R}}$	Yes						\$0.70	4		2180
ADM811T	+3.04	+3.11	No			$\overline{\text{R}}$	Yes						\$0.70	4		2180
ADM812R	+2.59	+2.66	No			R	Yes						\$0.70	4		2180
ADM812S	+2.89	+2.96	No			R	Yes						\$0.70	4		2180
ADM812T	+3.04	+3.11	No			R	Yes						\$0.70	4		2180

## +5.0 V Circuits without Watchdog Timer

ADM707	+4.5	+4.75	Yes	1.2/1.3	1.2/1.3	R & $\overline{\text{R}}$	Yes	160	280				\$1.16	8		1865
ADM708	+4.25	+4.5	Yes	1.2/1.3	1.2/1.3	R & $\overline{\text{R}}$	Yes	160	280				\$1.05	8		1865
ADM811L	+4.56	+4.7	No			$\overline{\text{R}}$	Yes	160	280				\$1.16	4		2180
ADM811M	+4.31	+4.45	No			$\overline{\text{R}}$	Yes	160	280				\$1.05	4		2180
ADM812L	+4.56	+4.7	No			R	Yes	160	280				\$1.16	4		2180
ADM812M	+4.31	+4.45	No			R	Yes	160	280				\$1.05	4		2180
ADM6315	FS	FS	No			R	Yes	160	280				\$0.70	4	Factory Set Thresholds	2180

■ = New Product since 1997 Short Form Designers' Guide.



# µPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

## Reset Generators without Manual Input

Model	Reset Generator Threshold		Power Fail Indicator	Power Fail Threshold		RESET or $\overline{\text{RESET}}$	Reset Timeout Delay		Manual Reset	Watchdog Timeout		Int. Oscillator Min/Max Short	Min Long	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	Min	Max		Min	Max		µs	Max		ms	ms						
ADM709R	+2.55	+2.7	No	No	No	$\overline{\text{R}}$	140	380	No					8	\$0.70		1893
ADM809R	+2.59	+2.66	No	No	No	$\overline{\text{R}}$	140	380	No					3	\$0.70		2159
ADM810R	+2.59	+2.66	No	No	No	$\overline{\text{R}}$	140	380	No					3	\$0.70		2159
ADM709S	+2.85	+3.	No	No	No	$\overline{\text{R}}$	140	380	No					8	\$0.70		1893
ADM809S	+2.89	+2.96	No	No	No	$\overline{\text{R}}$	140	380	No					3	\$0.70		2159
ADM810S	+2.89	+2.96	No	No	No	$\overline{\text{R}}$	140	380	No					3	\$0.70		2159
ADM697	+3.	+5.5	NA	No	No	$\text{R} \ \& \ \overline{\text{R}}$	35	70	No		1/2.25	4032/4097		16	\$3.00		1568
ADM8697	+3.	+5.5	NA	No	No	$\text{R} \ \& \ \overline{\text{R}}$	35	70	No		1/2.25	4032/4097		16	\$3.00		2145
ADM709T	+3.	+3.15	No	No	No	$\overline{\text{R}}$	140	380	No					8	\$0.70		1893
ADM809T	+3.04	+3.11	No	No	No	$\overline{\text{R}}$	140	380	No					3	\$0.70		2159
ADM810T	+3.04	+3.11	No	No	No	$\text{R}$	140	380	No					3	\$0.70		2159

## +3.0 V Circuits without Watchdog Timer

ADM809J	+3.93	+4.06	No	No	No	$\overline{\text{R}}$	160	280	No					3	\$1.05		2159
ADM709M	+4.25	+4.5	No	No	No	$\overline{\text{R}}$	140	380	No					8	\$0.70		1893
ADM809M	+4.31	+4.45	No	No	No	$\overline{\text{R}}$	160	280	No					3	\$1.05		2159
ADM810M	+4.31	+4.45	No	No	No	$\overline{\text{R}}$	160	280	No					3	\$1.05		2159
ADM698	+4.5	+4.75	No	No	No	$\overline{\text{R}}$	140	280	No					8	\$1.60		1570
ADM699	+4.5	+4.75	No	No	No	$\text{R} \ \& \ \overline{\text{R}}$	140	280	No		1/2.25			8	\$1.90		1570
ADM8698	+4.5	+4.75	No	No	No	$\overline{\text{R}}$	140	280	No					8	\$1.60		2162
ADM8699	+4.5	+4.75	No	No	No	$\text{R} \ \& \ \overline{\text{R}}$	140	280	No		1/2.25			8	\$1.90		2162
ADM709L	+4.5	+4.75	No	No	No	$\overline{\text{R}}$	140	380	No					8	\$0.70		1893
ADM809L	+4.56	+4.7	No	No	No	$\overline{\text{R}}$	160	280	No					3	\$1.16		2159
ADM810L	+4.56	+4.7	No	No	No	$\text{R}$	160	280	No					3	\$1.16		2159



# μPROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS

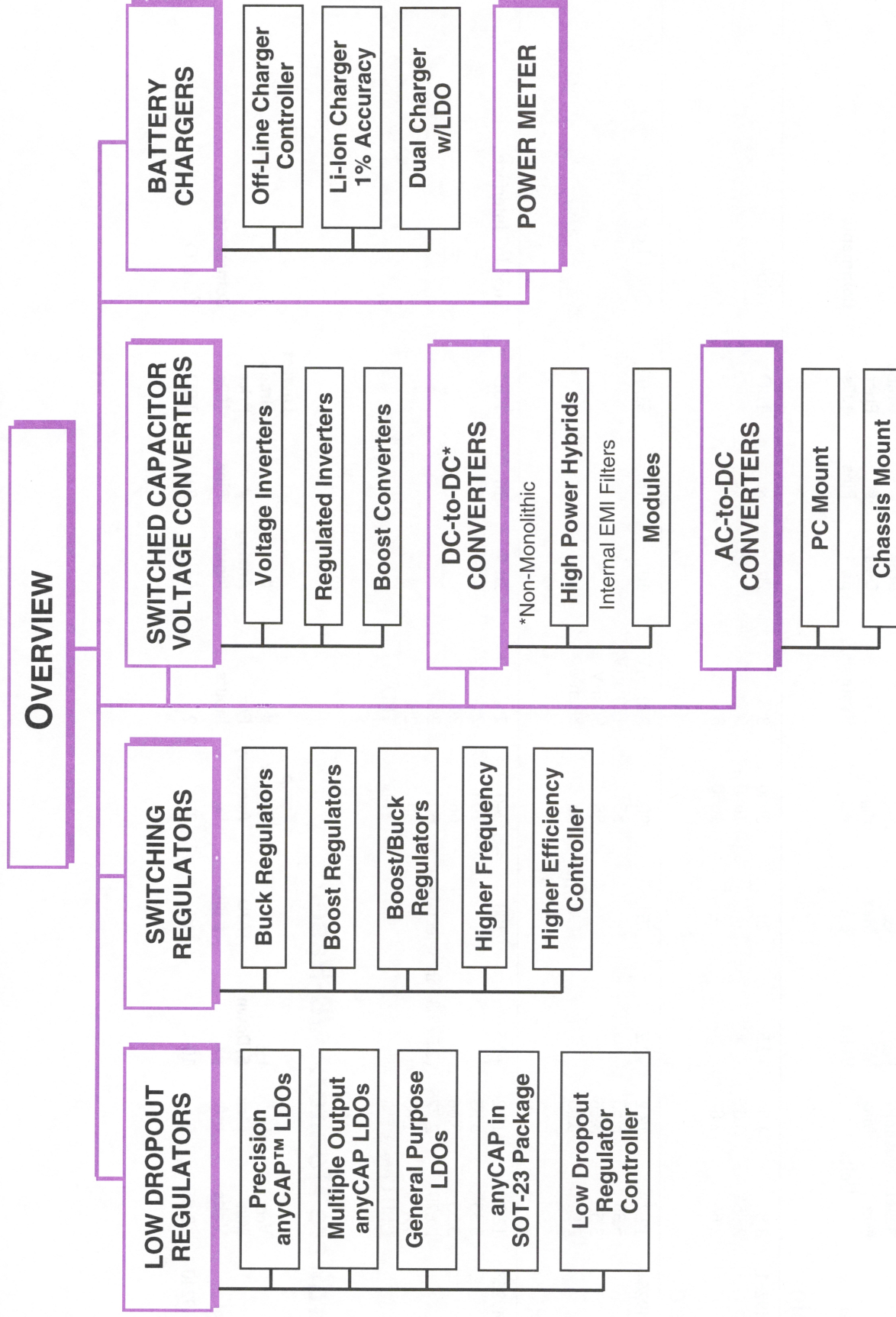
## Hardware Monitors: Comparator-Based

Model	Reset Threshold Min	V <sub>CC</sub> Min	I <sub>CC</sub> Max	R <sub>IN</sub> kΩ	Hysteresis	Prop Delay μs	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Triple</b>										
ADM9261	3.8	+2.5	20	3000	3%	20	8	TBD	Triple	2207
	2.85	3.0		1650	3%					
	2.66	2.8		1650	3%					
<b>Quad</b>										
ADM9264	12.7	+2.7	75	200	320 mV	10	16	\$1.00	Quad Low Cost	2158
	5.35	5.55		85	130 mV					
	3.53	3.66		55	90 mV					
	2.94	3.05		45	80 mV					
<b>Hex</b>										
ADM9268	12.7	+2.5	100	240	2%	20	16	TBD	Hex, I <sup>2</sup> C Interface	2483
	5.35	5.55		100	2%					
	3.53	3.66		66	2%					
	2.675	2.775	(2.5/3.3 Pin Selectable)	50	2%					
	1.6	1.66		30	2%					
	CPU Core ± 5%									

## Hardware Monitor: A/D-Based

Model	V <sub>CC</sub> Min	I <sub>CC</sub> Max	I <sub>CC</sub> S/Down	A/D # Bits	Temp Sensor Accuracy %	# Fan Inputs	# Analog Inputs	# Pins	Lowest Grade Price 100s	Comments	Fax- code
ADM9240	+2.85	2	10	10	3	2	6	24	TBD	I <sup>2</sup> C I/O	2442







## LOW DROPOUT REGULATORS

### PRECISION anyCAP-LDOs

▶ **ADP3300/ADP3308** (50 mA)  
 $V_{IN}$ : +3 V to +16 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.2 V,  
+3.3 V, +5 V  
SOT-23: 6/5 Pins

**ADP3301** (100 mA)  
 $V_{IN}$ : +3 V to +12 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.2 V,  
+3.3 V, +5 V  
SO-8 Package

**ADP3302** (100 mA)  
 $V_{IN}$ : +3 V to +12 V  
 $V_{OUT}$ : +3 V, +3.2 V, +3.3 V,  
+5 V  
SO-8 Package

**ADP3303** (200 mA)  
 $V_{IN}$ : +3.2 V to +12 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.2 V,  
+3.3 V, +5 V  
SO-8 Package

▶ **ADP3306** (300 mA)  
 $V_{IN}$ : +3.2 V to +12 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.2 V,  
+3.3 V, +5 V  
SO-8 and TSSOP Packages

▶ **ADP3307/ADP3309** (100 mA)  
 $V_{IN}$ : +3 V to +12 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.3 V  
SOT-23: 6/5 Pins

### MULTIPLE OUTPUT anyCAP-LDOs

**ADP3302** (100 mA)  
 $V_{IN}$ : +3 V to +12 V  
 $V_{OUT}$ : +3 V, +3.2 V, +3.3 V,  
+5 V  
SO-8 Package, Dual Error Flag

### GENERAL PURPOSE LDOs

**ADM663A** (100 mA)  
 $V_{IN}$ : +2 V to +16.5 V  
 $V_{OUT}$ : +3.3 V, +5 V, Adj.  
SO-8 Package

**ADM666A** (100 mA)  
 $V_{IN}$ : +2 V to +16.5 V  
 $V_{OUT}$ : 3.3 V, +5 V, Adj.  
Low Battery Detection

**ADP667** (200 mA)  
 $V_{IN}$ : +3.5 V to +16.5 V  
 $V_{OUT}$ : +5 V, Adj.  
SO-8 Package

**ADP3367** (300 mA)  
 $V_{IN}$ : +2.5 V to +16.5 V  
 $V_{OUT}$ : +5 V, Adj.  
SO-8 Package

### anyCAP in SOT-23 PACKAGE

▶ **ADP3300/ADP3308** (50 mA)  
 $V_{IN}$ : +3 V to +16 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.2 V,  
+3.3 V, +5 V  
SOT-23: 6/5 Pins

▶ **ADP3307/ADP3309** (100 mA)  
 $V_{IN}$ : +3 V to +12 V  
 $V_{OUT}$ : +2.7 V, +3 V, +3.3 V  
SOT-23: 6/5 Pins

### LOW DROPOUT REGULATOR CONTROLLER

**ADP3310** ( $I_Q$ : 800 mA)  
 $V_{IN}$ : +2.5 V to +15 V  
 $V_{OUT}$ : +2.8 V, +3 V, +3.3 V, +5 V  
SO-8 Package



## SWITCHING REGULATORS

### BUCK REGULATORS

ADP1073  
VIN: +30 V  
VOUT: +5 V, +12 V, Adj.  
IQ = 95  $\mu$ A

ADP1108  
VIN: +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 90  $\mu$ A

ADP1110  
VIN: +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1111  
VIN: +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1173  
VIN: +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 110  $\mu$ A

ADP3000  
VIN: +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
400 kHz, IQ = 500  $\mu$ A

### BOOST REGULATORS

ADP1073  
VIN: +1 V to +12.6 V  
VOUT: +5 V, +12 V, Adj.  
IQ = 95  $\mu$ A

ADP1108  
VIN: +2 V to +12.6 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 90  $\mu$ A

ADP1109/ADP1109A  
VIN: +2 V to +9/12 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 320  $\mu$ A

ADP1110  
VIN: +1.15 V to +12.6 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1111  
VIN: +2 V to 12.6 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1173  
VIN: +2 V to 12.6 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 110  $\mu$ A

ADP3000  
VIN: +2 V to 12.6 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
400 kHz, IQ = 500  $\mu$ A

### BOOST/BUCK REGULATORS

ADP1073  
VIN: +1 V to +30 V  
VOUT: +5 V, +12 V, Adj.  
IQ = 95  $\mu$ A

ADP1108  
VIN: +2 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 90  $\mu$ A

ADP1110  
VIN: +1 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1111  
VIN: +2 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 300  $\mu$ A

ADP1173  
VIN: +2 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
IQ = 110  $\mu$ A

ADP3000  
VIN: +2 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
400 kHz, IQ = 500  $\mu$ A

### HIGHER FREQUENCY

ADP3000  
VIN: +2 V to +30 V  
VOUT: +3.3 V, +5 V, +12 V, Adj.  
400 kHz, IQ = 500  $\mu$ A

### HIGH EFFICIENCY CONTROLLERS

ADP1147  
VIN: +3.5 V to +20 V  
VOUT: +3.3 V, +5 V  
IQ = 10  $\mu$ A  
Sleep Mode, +95% Eff.

ADP1148  
VIN: +3.5 V to +18 V  
VOUT: +3.3 V, +5 V, Adj.  
IQ = 10  $\mu$ A  
Syn Switch w/ >95% Eff.

5-Bit Programmable Synchronous Pentium® Pro

ADP3152

VIN: +5 V to +12 V  
VOUT: Programmable  
+3.3 V to +5 V



## SWITCHED CAPACITOR VOLTAGE CONVERTERS

### UNREGULATED VOLTAGE INVERTERS

- ADM660  
V<sub>OUT</sub>: -1.5 V to -7 V  
I<sub>OUT</sub>: 50 mA w/ +90% Eff.
- ADM8660  
V<sub>OUT</sub>: +11.5 V to -7 V  
I<sub>OUT</sub>: 100 mA  
Shutdown Mode
- ADP3603  
V<sub>OUT</sub>: -1.2 V to -4.0 V  
I<sub>OUT</sub> MAX: 50 mA  
F<sub>SWITCH</sub> is 120 kHz
- ADP3604  
V<sub>OUT</sub>: -1.3 V to -4.0 V  
I<sub>OUT</sub> MAX: 120 mA  
F<sub>SWITCH</sub> is 120 kHz
- ADP3605  
V<sub>OUT</sub>: -1.2 V to -4.0 V  
I<sub>OUT</sub> MAX: 120 mA  
F<sub>SWITCH</sub> is 250 kHz

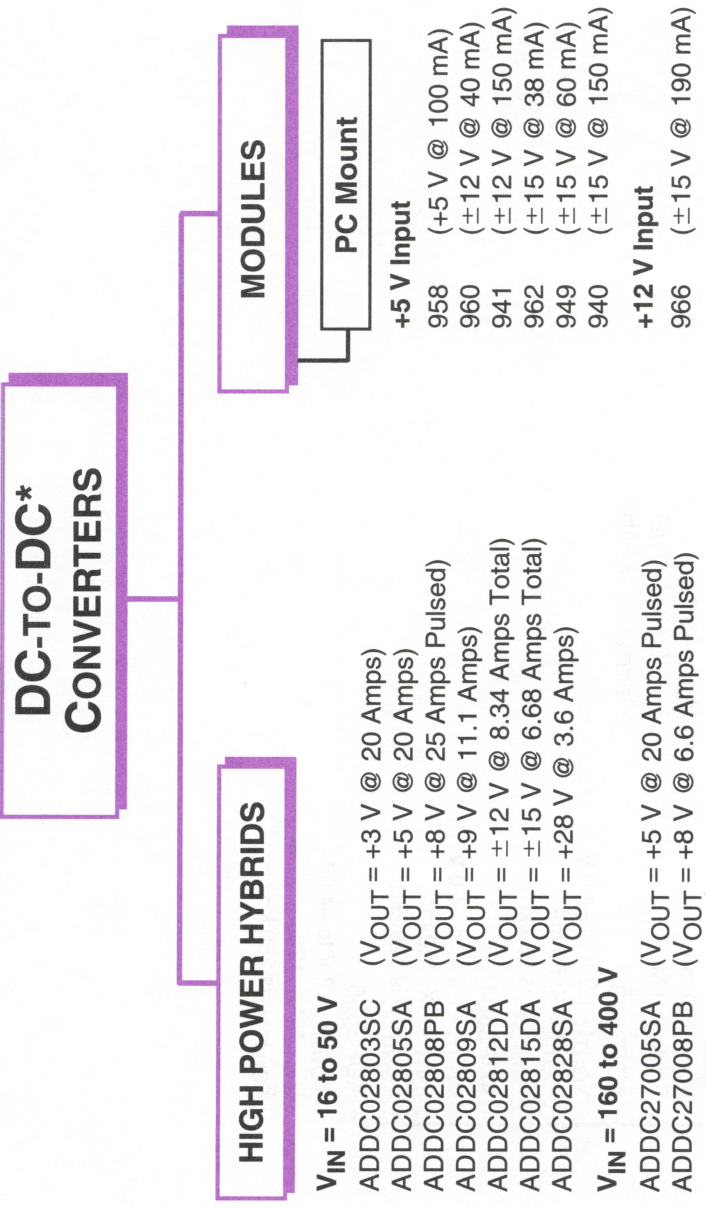
### REGULATED VOLTAGE INVERTERS

- ADP3603  
V<sub>OUT</sub>: -3.0 V  
I<sub>OUT</sub> MAX: 50 mA  
F<sub>SWITCH</sub> is 120 kHz
- ADP3604  
V<sub>OUT</sub>: -3.0 V  
I<sub>OUT</sub> MAX: 120 mA  
F<sub>SWITCH</sub> is 120 kHz

### BOOST CONVERTERS

- ADM660  
V<sub>IN</sub>: +1.5 V to +7 V  
V<sub>OUT</sub>: 2 × V<sub>IN</sub>  
I<sub>OUT</sub> = 100 mA

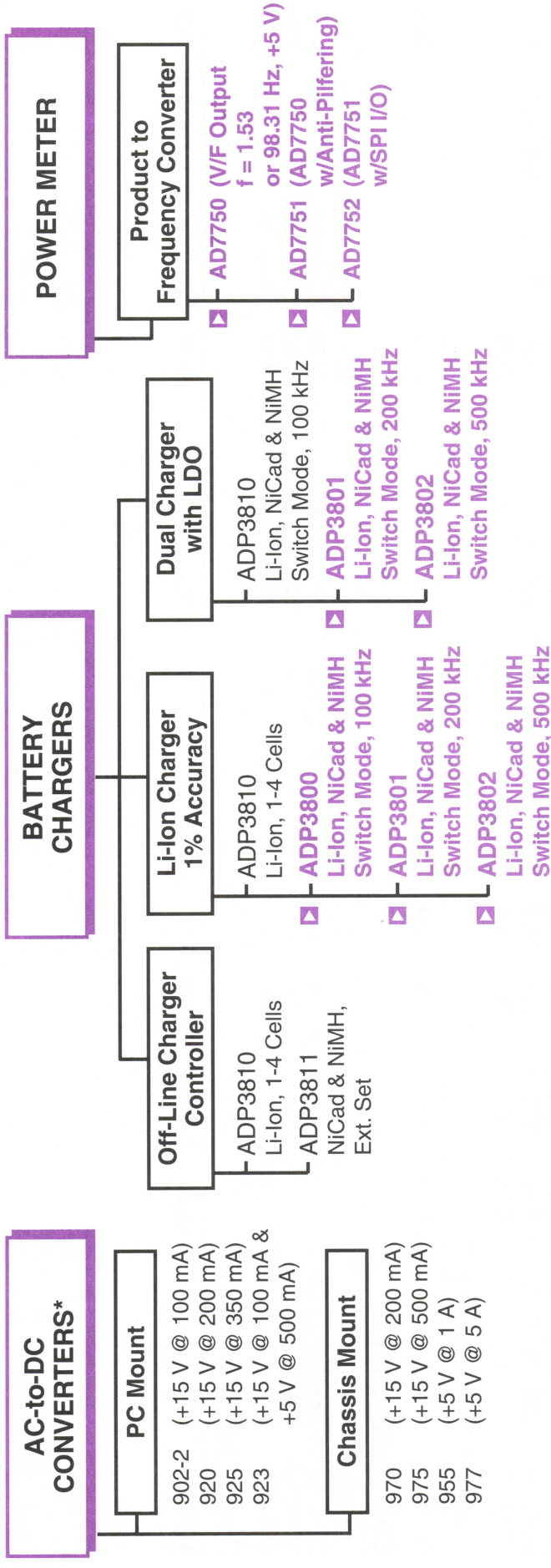




\*Non-Monolithic Circuits



# POWER MANAGEMENT



## BATTERY BACKUP

See  $\mu$ PROCESSOR SUPERVISORY  
CIRCUITS & RESET GENERATORS Section.

\*Input Voltage 105 V AC to 125 V AC

▶ = New Product since 1997 Short Form Designers' Guide.



## DC-to-DC Converters: Linear Low Dropout Regulators

Model	Input Voltage Range Volts	V <sub>OUT</sub> Options Volts	Dropout Voltage V @ I <sub>MAX</sub>	I <sub>O</sub> @ I <sub>OUT</sub> max $\mu$ A	V <sub>OUT</sub> Accuracy @ 25°C/Temp %	Low V <sub>BATT</sub> Detect	I <sub>OUT</sub> Sense	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>Single Output</b>											
ADP3367	2.5 to 16.5	5, Adj.	0.15	17	2	Yes	No	8	\$3.07	6 kV ESD Protection	1913
ADP667	3.5 to 16.5	5, Adj.	0.15	20	4	Yes	No	8	\$2.28		1917
ADM663	2 to 16.5	5, Adj.	1.0	12	5	No	Yes	8	\$1.54	V <sub>TEMP</sub> + I <sub>OUT</sub> Sense	1558
ADM666	2 to 16.5	5, Adj.	1.0	12	5	Yes	No	8	\$1.82		1558
<b>Single Output anyCAP</b>											
ADP3300	3 to 16	2.7, 3, 3.2, 3.3, 5	0.1	100	0.8/1.4	No	No	3	\$1.25		2042
ADP3308	3 to 16	2.7, 3, 3.2, 3.3, 5	0.1	100	0.8	No	No	5	\$1.25	LP2980 Pinout	2302
ADP3309	3 to 12	2.7, 3, 3.2, 3.3, 5	0.16	100	0.8	No	No	5	\$1.25	LP2950 Pinout	2423
ADP3301	3 to 12	2.7, 3, 3.2, 3.3, 5	0.1	100	0.8/1.4	No	No	8*	\$1.25	Loss of Reg. Flag	2013
ADP3303	3 to 12	2.7, 3, 3.2, 3.3, 5	0.18	100	0.8/1.4	No	No	8*	\$1.43	Loss of Reg. Flag	2043
ADP3306	3.2 to 12	2.7, 3, 3.2, 3.3, 5	0.3	100	1/1.5	No	No	8*	\$2.02	14-Lead TSSOP Also	2236
ADP3307	3 to 12	2.7, 3, 3.2, 3.3, 5	0.16	100	0.8/1.5	No	No	3	\$1.25		2301
<b>Dual Output anyCAP**</b>											
ADP3302	3 to 12	2.7, 3, 3.2, 3.3, 5	0.1	100	0.8/1.4	No	No	8*	\$1.90		2014
<b>Selectable Output</b>											
ADM663A	2 to 16.5	5	100	6	5	No	Yes	8	\$1.76	V <sub>SET</sub> = GND, V <sub>TEMP</sub> Out	1559
ADM663A	2 to 16.5	3.3	100	6	5	No	Yes	8	\$1.76	V <sub>SET</sub> = V <sub>IN</sub> , V <sub>TEMP</sub> Out	1559
ADM666A	2 to 16.5	5	100	6	5	Yes	No	8	\$2.02	V <sub>SET</sub> = GND	1559
ADM666A	2 to 16.5	3.3	100	6	5	Yes	No	8	\$2.02	V <sub>SET</sub> = V <sub>IN</sub>	1559
<b>Regulator Controller</b>											
ADP3310	2.5 to 15	2.8, 3, 3.3, 5	0.07	1000	1	1.5	No	8	\$1.10	W/External NDP6020F	2120

\*Thermal Coastline Package

\*\*No restriction on ESR of cap used.

▣ = New Product since 1997 Short Form Designer's Guide.



## DC-to-DC Converters: Switched Capacitor

Model	V dc Input Volts	Oscillator Frequency kHz	V <sub>OUT</sub> Volts	I <sub>OUT</sub> mA	I <sub>Q</sub> mA	With Shut- Down	# Pins	Lowest Grade Price 100s	Comments	Fax- code
<b>Voltage Inverters, Unregulated</b>										
ADM660	+1.5 to +7	25 or 120	-1.5 to -7	100	0.6	No	8	\$1.90	Freq. Set by Ext. Capacitor	1934
ADM8660	+1.5 to +7	25 or 120	-1.5 to -7	100	0.6	Yes	8	\$2.00	With Shutdown	1934
ADP3603	+4.5 to +6	240	-1.2 to -4	50	2.4	Yes	8	\$2.00	±3% Accuracy @ -3 V Output	1982
ADP3604	+4.5 to +6	240	-1.2 to -4	120	2.9	Yes	8	\$2.50	±3% Accuracy @ -3 V Output	2051
<b>Voltage Inverters, Regulated</b>										
ADP3603	+4.5 to +6	240	-3 ±3%	50	2.4	Yes	8	\$2.00	Output Ohms/Ripple = 12 Ω/25 mV	1982
ADP3604	+4.5 to +6	240	-3 ±3%	120	2.9	Yes	8	\$2.50	Output Ohms/Ripple = 8 Ω/25 mV	2051
<b>Boost Converters</b>										
ADM660	+2.5 to +7	25 or 120	+5 to +14	100	0.6	No	8	\$1.90	Voltage Doubler Configuration	1934



## DC-to-DC Converters: Switching Regulators\*

Model	Input Voltage Volts	Output Voltage Options Volts	I <sub>OUT</sub> mA	I <sub>O</sub> μA	Oscillator Frequency kHz	Control <sup>†</sup> Method	# Pins	Lowest Grade Price 1000s	Comments	Fax- code
<b>Buck Regulators: Step-Down</b>										
ADP1073	30	5, 12 Adj.	40	95	19	PST	8	\$2.57		2015
ADP1108	30	3.3, 5, 12 Adj.	300	90	19	PST	8	\$2.07		2017
ADP1110	30	3.3, 5, 12 Adj.	NS	300	70	PST	8	\$2.57		2019
ADP1111	30	3.3, 5, 12 Adj.	200	110	72	PST	8	\$2.07		2020
ADP1173	30	3.3, 5, 12 Adj.	100	110	24	PST	8	\$2.07		2016
ADP3000	30	3.3, 5, 12 Adj.	180	500	400	PST	8	\$2.46	77% Efficiency	2028
<b>Boost Regulators: Step-Up</b>										
ADP1073	1.15 to 12.6	5, 12 Adj.	10	95	19	PST	8	\$2.57		2015
ADP1108	2 to 12.6	3.3, 5, 12 Adj.	150	90	19	PST	8	\$2.07		2017
ADP1109	2 to 12	3.3, 5, 12 Adj.	100	320	120	PST	8	\$2.07		2018
ADP1109A	2 to 9	3.3, 5, 12 Adj.	100	320	120	PST	8	\$2.07		2364
ADP1110	1.15 to 12.6	3.3, 5, 12 Adj.	NS	300	70	PST	8	\$2.57		2019
ADP1111	2 to 12.6	3.3, 5, 12 Adj.	100	110	72	PST	8	\$2.07		2020
ADP1173	2 to 12.6	3.3, 5, 12 Adj.	80	110	24	PST	8	\$2.07		2016
ADP3000	2 to 12.6	3.3, 5, 12 Adj.	100	500	400	PST	8	\$2.46	80% Efficiency	2028
<b>Buck/Boost Regulators: Step-Up or Step-Down</b>										
ADP1073	1 to 30	5, 12 Adj.	10/40	95	19	PST	8	\$2.57		2015
ADP1108	2 to 30	3.3, 5, 12 Adj.	150/300	90	19	PST	8	\$2.07		2017
ADP1110	1.15 to 30	3.3, 5, 12 Adj.	NS	300	70	PST	8	\$2.57		2019
ADP1111	2 to 30	3.3, 5, 12 Adj.	100/200	110	72	PST	8	\$2.07		2020
ADP1173	2 to 30	3.3, 5, 12 Adj.	80/100	110	24	PST	8	\$2.07		2016
ADP3000	2 to 30	3.3, 5, 12 Adj.	100/180	500	400	PST	8	\$2.46	80% Efficiency	2028
<b>High Frequency Regulators</b>										
ADP3000	2 to 30	3.3, 5, 12 Adj.	100/180	500	400	PFM	8	\$2.46	80% Efficiency	2028
<b>High Frequency Controllers</b>										
ADP1147	3.5 to 20	3.3, 5	5 mA-2A	1.6	250	PCT <sup>‡</sup>	8	\$2.90	Step-Down Only, 97% Efficiency	2022
ADP1148	3.5, 5 Adj.	3.3, 5 Adj.	5 mA-2A	1.6	250	PCT <sup>‡</sup>	8	\$3.31	98% Efficiency	2023
ADP3152	+5 to +12 V	1.3 to 3.5	14A		250	PCT <sup>‡</sup>	16	\$TBD	5-Bit Programming	2422

\* All available with adjustable outputs.

<sup>†</sup>PST = Pulse Skipping Technique = Periodic Pulse Width Modulator.

<sup>‡</sup>Control Method = Periodic Constant Off Time.

▣ = New Product since 1997 Short Form Designers' Guide.



## DC-to-DC Converters

Model	V dc Input		V dc Out	I <sub>OUT</sub> Max	Line Regulation	Load Regulation	V <sub>OUT</sub> 50% Step	Response Time	Watts Max	Grade Price 100s	Comments	Fax-code
	Volts	Volts										
High Power Hybrids												
ADDC02803SC	16 to 50	3.3		20	1	1	0.36	140	66	\$775.00	Integral EMI Filters	1947
ADDC02805SA	16 to 50	5		20	1	1	0.5	125	100	\$775.00	Integral EMI Filters	1947
ADDC02808PB	16 to 50	8		25 Pulsed	1	2.5	See D/S	See D/S	200	\$775.00	Optimized for Pulsed Loads	2071
ADDC02809SA	16 to 50	9		11.1	2	2	0.65	110	100	\$775.00	Integral EMI Filters	CF
ADDC02812DA	16 to 50	±12		8.34 Total	4	4	0.85	150	100	\$775.00	Integral EMI Filters	2012
ADDC02815DA	16 to 50	±15		6.68 Total	5	6	0.85	150	100	\$775.00	Integral EMI Filters	2012
ADDC02828SA	16 to 50	28		3.6	30	30	See D/S	See D/S	100	\$775.00	Optimized for Pulsed Loads	2101
ADDC27005SA	16 to 50	5		20	5	5	0.5	170	100	\$775.00	Integral EMI Filters	2099
ADDC27008PB	16 to 50	8		25 Pulsed	5	10	See D/S	See D/S	200	\$775.00	Optimized for Pulsed Loads	2100

### NOTES FOR ADDC MODELS

1. All products are manufactured in a hermetically sealed, molybdenum hybrid package. Typ weight for each product is 85 grams.
2. All products are available in three screening/price levels: industrial, ruggedized industrial, 883B/SMD.
3. Contact factory for modified standard versions and for information on lower power product line in development.

Model	Output Voltage		Output Current mA	Input Voltage Volts	Input Voltage Rate Volts	Input Current Full Load	Output Voltage Error max	Temperature Coefficient /°C max	Line Regulation Full Range %	Load Regulation		Common Specifications*	Fax- code
	Volts	Volts								No Load Full Load %	Unit Price		
Modules <sup>†</sup>													
958	5	100	5	4.5/5.5	200 mA	±5%	±0.01% (typ)	0.3	0.4	0.4	\$ 58.35	Output Noise and Ripple: 20 mV p-p, with 15 µF	CF
941	±12	±150	5	4.75/5.25	1.17 A	±1%	±0.01%	0.3	0.4	0.4	\$123.06	20 mV p-p, with 15 µF	
960	±12	±40	5	4.5/5.5	384 mA	±5%	±0.01% (typ)	0.3	0.4	0.4	\$ 75.32	tantalum capacitor across each output (2 mV rms	
962	±15	±33	5	4.5/5.5	396 mA	±5%	±0.01% (typ)	0.3	0.4	0.4	\$179.29	max, 949).	
966	±15	±190	12	11.2/13.2	710 mA	±1%	±0.005% (typ)	0.3	0.4	0.4	\$ 78.28	Breakdown Voltage: 300 V dc min, 500 V dc	
949	±15	±60	5	4.65/5.5	0.6 A	±2%	±0.03%	1	0.5	0.5	\$135.96	min, 949) Input Filter Type: π	
940	±15	±150	5	4.75/5.25	1.35 A	±1%	±0.01%	0.3	0.4	0.4	\$135.96		

### Modules<sup>†</sup>

\*Dimensions in Inches: 94X Series:  $2.0 \times 2.0 \times 0.38$ ; 958 and 96X Series:  $1.25 \times 0.8 \times 0.4$ .

<sup>†</sup>Temperature Range:  $-25^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$ . Storage Range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  ( $+100^{\circ}\text{C}$ , 949). Fusing: If input fusing is desired, we recommend the use of a slow blow type fuse that is rated at 150%-200% of the dc/dc converter's full load input current.



## AC-to-DC Converters

Model	# Outputs	Output Voltage		Output Current mA	Line Reg. max %	Load Reg. max %	Output Voltage		Ripple & Noise mV rms max	Unit Price	Common Specifications	Fax-code
		Volts	Volts				Error max	max				
Printed Circuit Board Mount*												
902-2	2	±15		±100	0.02	0.02	+300 mV	0.5	\$123.29	Input Voltage Range: 105 V ac to 125 V ac		CF
920	2	±15		±200	0.02	0.02	+300 mV	0.5	\$162.23	Frequency: 50 Hz to 250 Hz		CF
925	2	±15		±350	0.02	0.02	±1%	0.5	\$220.63	Temperature Coefficient: 0.02%/°C		CF
923	3	±15		±100	0.02	0.02	±1%	0.5	\$173.04	Breakdown Voltage: 500 V rms, min		CF
		+5		500	0.02	0.05	±1%	0.5	\$173.04	Isolation Resistance: 50 mΩ		
Short Circuit Protected: Prolonged operation should be avoided since excessive temperature rises will occur.												
Operating Temperature: -25°C to +71°C												
Storage Temperature: -25°C to +85°C												

## Chassis Mount†

970	2	±15	±200	±200	0.05	0.05	±2%	1	\$171.96	CF
975	2	±15	±500	±500	0.05	0.05	±2%	1	\$234.69	CF
955	1	5	1000	1000	0.05	0.15	±2%	2	\$161.71	CF
977	1	5	5000	5000	0.05	0.10	±2%	100 (p-p typ)	\$302.82	CF

Dimensions in Inches:

\*3.5 × 2.5 × 0.875

†4.4 × 2.7 × 1.45



## Battery Chargers

Model	No. of Cells Charged	Cell Chemistry	V <sub>CC</sub> Operating Range	# Pins	Lowest Grade Price 100s	Comments	Fax-code
-------	----------------------	----------------	---------------------------------	--------	-------------------------	----------	----------

### Off-Line Charger Controllers

ADP3810	1 to 4	LiIon	2.7 V to 16 V	8	\$2.57	±1% Accuracy	2069
ADP3811	Programmable	NiCad, NiMH	2.7 V to 16 V	8	\$2.43	±1.8% Accuracy	2069

### Lilou Charger with 1% Accuracy

ADP3810	1 to 4	LiIon	2.7 V to 16 V	8	\$2.57	±1% Accuracy	2069
---------	--------	-------	---------------	---	--------	--------------	------

### Dual Chargers with LDO

Model	No. of Cells Charged	Cell Chemistry	Oscillator Frequency (kHz)	End of Charge Accuracy %	# Pins	Lowest Grade Price 100s	Comments	Fax-code
ADP3800*	1 to 9	LiIon, NiCad, NiMH	100	1	16	\$2.80	Drives Ext. PMOS Transistor	2200
ADP3801*	1 to 9	LiIon, NiCad, NiMH	200	1	16	\$2.80	Drives Ext. PMOS Transistor	2200
ADP3802*	1 to 9	LiIon, NiCad, NiMH	500	1	16	\$2.80	Drives Ext. PNP Transistor	2200

### Battery Backup

See  $\mu$ PROCESSOR SUPERVISORY CIRCUITS & RESET GENERATORS section.

## Power Meters

Model	# Inputs	Power Supply	Measurement Error G = 1 % Reading	Frequency Output Hz	F <sub>CLK</sub> MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
AD7750	2	+5 V @ 3 mA	0.1	0.3	Programmable	2 to 4.5	\$6.95	Without Antipilfering	2090
AD7751	2	+5 V @ 4 mA	0.1	0.3	Programmable	3.58	\$TBD	With Antipilfering	2432
AD7752	2	TBD	0.1	0.3	Programmable	TBD	\$TBD	AD7751 w/SPI Interface	2433

\*Requires microprocess for remote control when used with NiCad Batteries.

■ = New Product since 1997 Short Form Designers' Guide.



## VOLTAGE REFERENCES

### SERIES REFERENCES

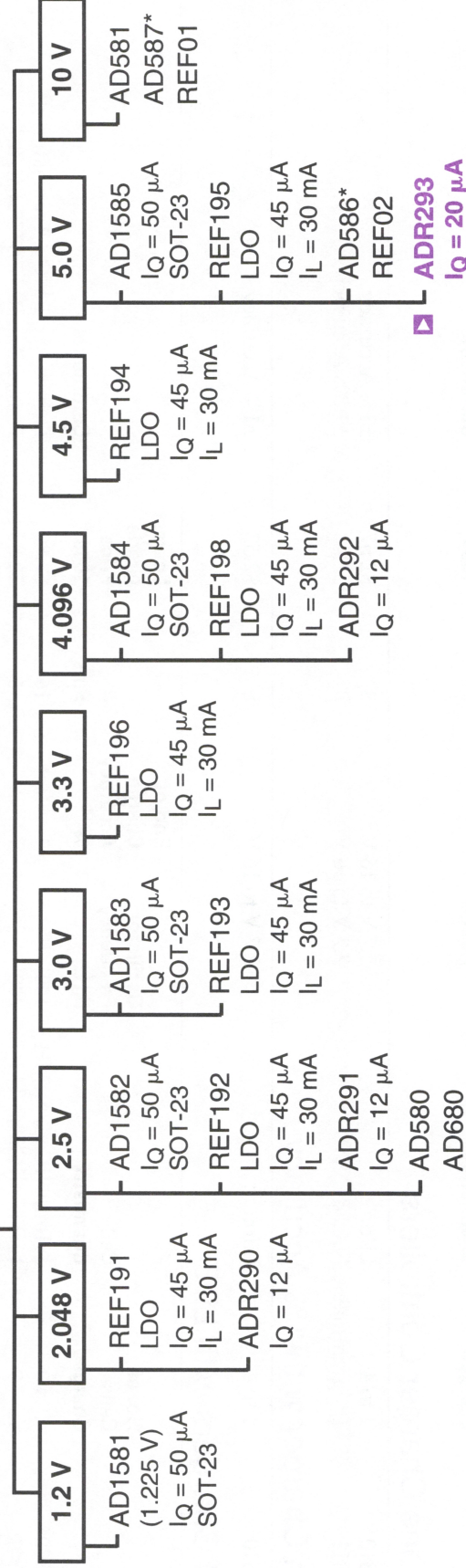
#### Single Output

#### Multiple Output

AD584 (+2.5 V, +5 V, +7.5 V or +10 V)  
AD588\* (+5 V or +10 V)  
(-5 V or -10 V)  
(±5 V)  
AD688\* (±10 V)  
AD780\*\* (+2.5 V or +3 V)

### SHUNT REFERENCES

AD589  
 $I_Q = 5 \mu A$   
AD1580 (1.225 V)  
LDO  
 $I_Q = 45 \mu A$   
 $I_L = 30 mA$



\*Buried Zener

\*\*With Temperature Output

▶ = New Product since 1997 Short Form Designers' Guide.



Model	Nominal Output Voltage Volts	Initial Calibration mV	Ref Drift ppm/°C	Noise 0.1 Hz to 10 Hz $\mu$ V p-p	Long Term Stability/ 1000 Hrs $\mu$ V	$I_o$ mA	$I_{OUT}$ mA	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>Shunt Regulators</b>											
AD589	+1.235	15	10 to 100	5	NS	50 $\mu$ A	NA	2	\$ 1.47	Two Terminal Shunt Reg	1185
AD1580	+1.225	1 to 10	50 to 100	5	NS	50 $\mu$ A	NA	3	\$ 0.85	Two Terminal Shunt Reg	1963

## Series Regulators

AD1581	+1.225	1.2-12	50 to 100	30	TBD	50 $\mu$ A	5	3	\$ 0.85	Series Mode, LDO	2124
AD1582	+2.5	2 to 20	50 to 100	30	TBD	50 $\mu$ A	5	3	\$ 0.85	Series Mode, LDO	2125
AD1583	+3.0	3 to 30	50 to 100	30	TBD	50 $\mu$ A	5	3	\$ 0.85	Series Mode, LDO	2125
AD1584	+4.096	4 to 40	50 to 100	30	TBD	50 $\mu$ A	5	3	\$ 0.85	Series Mode, LDO	2125
AD1585	+5.0	5 to 50	50 to 100	30	TBD	50 $\mu$ A	5	3	\$ 0.85	Series Mode, LDO	2125

## Fixed Output

AD580J	+2.5	10 to 75	10 to 85	60	250	2	10	3	\$ 2.36	Header Package Only	1176
AD680J	+2.5	50 to 100	20 to 25	10	63	0.250	10	8	\$ 3.25	Low Power	1231
AD1403	+2.5	25	40	NS	NS	1.5	10	8	\$ 1.65	Industry Standard	1057
AD1403A	+2.5	5 to 25	25	NS	NS	1.50	NS	8	\$ 2.30	Industry Standard	1057
REF03G	+2.5	15	50	6	NS	1.4	10	8	\$ 1.75	Low Cost	1757
REF43	+2.5	5 to 30	10 to 25	10	1 ppm/Mon	0.6	20	8/20	\$ 3.75		1762
AD780	+2.5 or 3.0	1 to 5	3 to 7	4	20	1	$\pm$ 10	8	\$ 3.90	Very Low Noise	1355
AD586	+5.0	2 to 25	2 to 20	4	75	3	$\pm$ 10	8	\$ 2.65	Can Be Used at -5 V	1182
REF02	+5.0	5 to 100	8.5 to 250	1	NS	1.4	10	8	\$ 1.65	On-Chip Temp Sensor	1756
AD581	+10.0	5 to 30	5 to 30	50	250	1	10	3	\$ 3.62	Header Package Only	1177
AD587	+10.0	5 to 10	5 to 20	4	150	4	$\pm$ 10	8	\$ 2.60	Can Be Used at -10 V	1183
REF01	+10.0	30 to 100	8.5 to 65	30	NS	1.4	10	8	\$ 2.59	Industry Standard	1755
AD688	$\pm$ 10	2, 5	3, 6	6	15	12	10	16	\$14.66		1234

## xFET References

ADR290	+2.048	2 to 6	5 to 25	10	0.2 ppm	10 $\mu$ A	5	3/8	\$ 2.42	Low Power, Low Hysteresis	2110
ADR291	+2.50	2 to 6	5 to 25	10	0.2 ppm	12 $\mu$ A	5	3/8	\$ 2.42	Low Power, Low Hysteresis	2110
ADR292	+4.096	2 to 6	5 to 25	10	0.2 ppm	12 $\mu$ A	5	3/8	\$ 2.42	Low Power, Low Hysteresis	2110
ADR293	+5.0	3 to 5	8 to 25	12	0.2 ppm	20 $\mu$ A	5	3/8	\$ 2.42	Low Power, Low Hysteresis	2255



# REFERENCES

## Precision References with Low Dropout

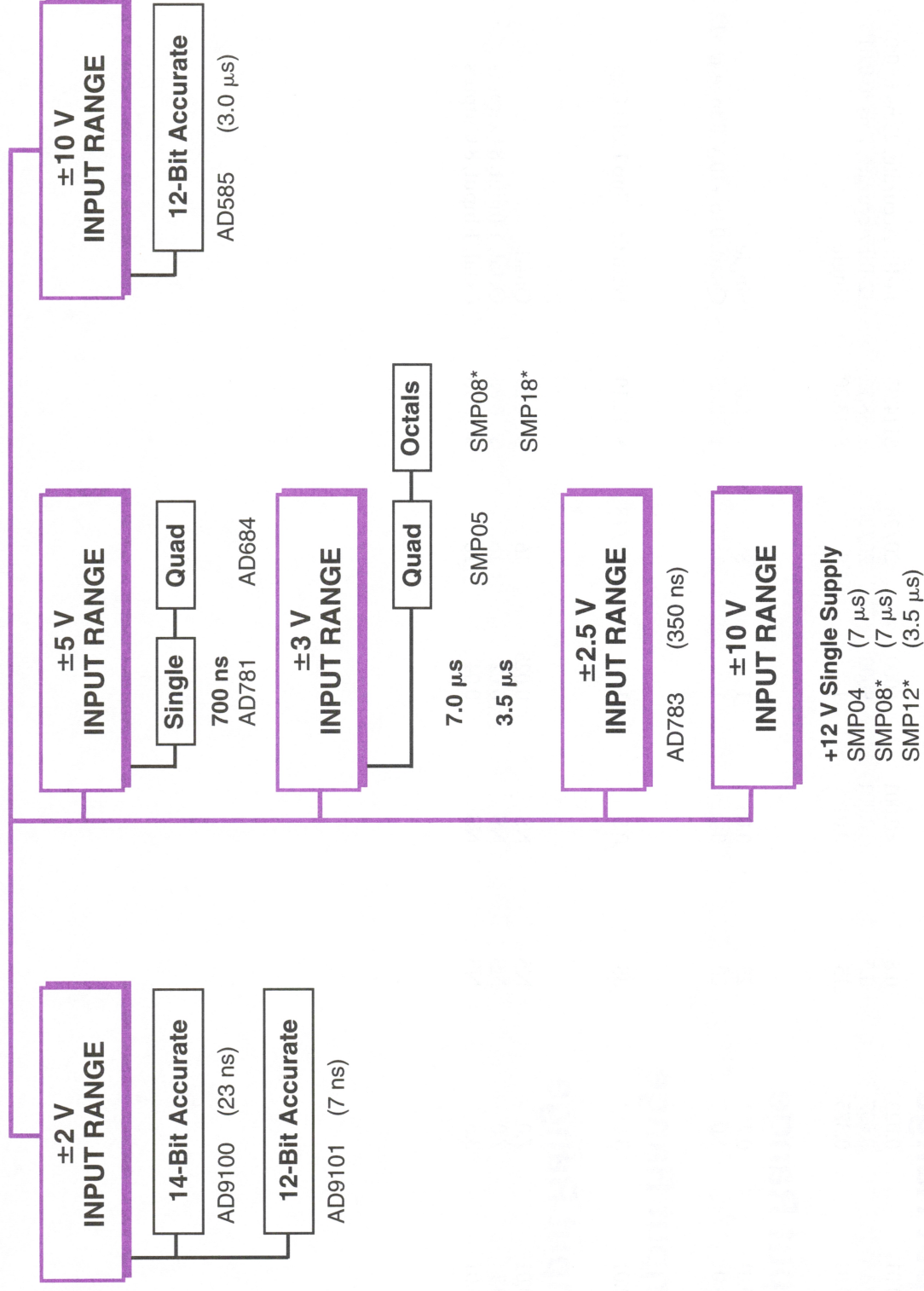
Model	Nominal Output Voltage Volts	Initial Calibration mV	Ref Drift ppm/°C	Noise 0.1 Hz to 10 Hz $\mu\text{V p-p}$	Long Term Stability/1000 Hrs $\mu\text{V}$	$I_o$ mA	$I_{OUT}$ mA	# Pins	Lowest Grade Price 100s	Comments	Fax-code
REF191	+2.048	2 to 10	5 to 25	50	NS	45 $\mu\text{A}$	30	8	\$3.60	High $I_{OUT}$	1761
REF192	+2.5	2 to 10	5 to 25	50	NS	45 $\mu\text{A}$	30	8	\$3.60	High $I_{OUT}$	1761
REF193	+3.0	10	25	50	NS	45 $\mu\text{A}$	30	8	\$1.49	High $I_{OUT}$	1761
REF196	+3.3	10	25	50	NS	45 $\mu\text{A}$	30	8	\$2.20	High $I_{OUT}$	1761
REF198	+4.096	2 to 10	4 to 8	50	NS	45 $\mu\text{A}$	30	8	\$2.20	High $I_{OUT}$	1761
REF194	+4.5	2 to 10	5 to 25	50	NS	45 $\mu\text{A}$	30	8	\$2.20	High $I_{OUT}$	1761
REF195	+5.0	2 to 10	5 to 25	50	NS	45 $\mu\text{A}$	30	8	\$1.40	High $I_{OUT}$	1761

## Selectable Output

Model	# of Buffer Amps	Output Voltage Option Volts	Initial Calibration Error $\pm\text{mV}$	PPM Grades ppm	Tracking Error $\pm\text{mV}$	Noise 0.1 Hz to 10 Hz $\mu\text{V p-p}$	Long Term Stability/1000 Hrs ppm	$I_o$ mA	$I_{OUT}$ mA	# Pins	Lowest Grade Price 100s	Fax-code
AD584	1	+10	5 to 30	15, 30	NA	50	25	1	10	8	\$4.10	1180
AD584		+7.5	4 to 20	15, 30	NA	50	25	1	10	8	\$4.10	1180
AD584		+5	3 to 15	15, 30	NA	50	25	1	10	8	\$4.10	1180
AD584		+2.5	2.5 to 7.5	15, 30	NA	50	25	1	10	8	\$4.10	1180
AD588	2	+10	5	1.5, 3, 4, 6	NS	6	15	10	10	16	\$6.82	1184
AD588		+5	5	1.5, 3, 4, 6	NS	6	15	10	10	16	\$6.82	1184
AD588		$\pm 5$	5	1.5, 3, 4, 6	1.5	6	15	10	10	16	\$6.82	1184
AD588		-5	5	1.5, 3, 4, 6	NS	6	15	10	10	16	\$6.82	1184
AD588		-10	5	1.5, 3, 4, 6	NS	6	15	10	10	16	\$6.82	1184



# SAMPLE/TRACK & HOLD AMPLIFIERS



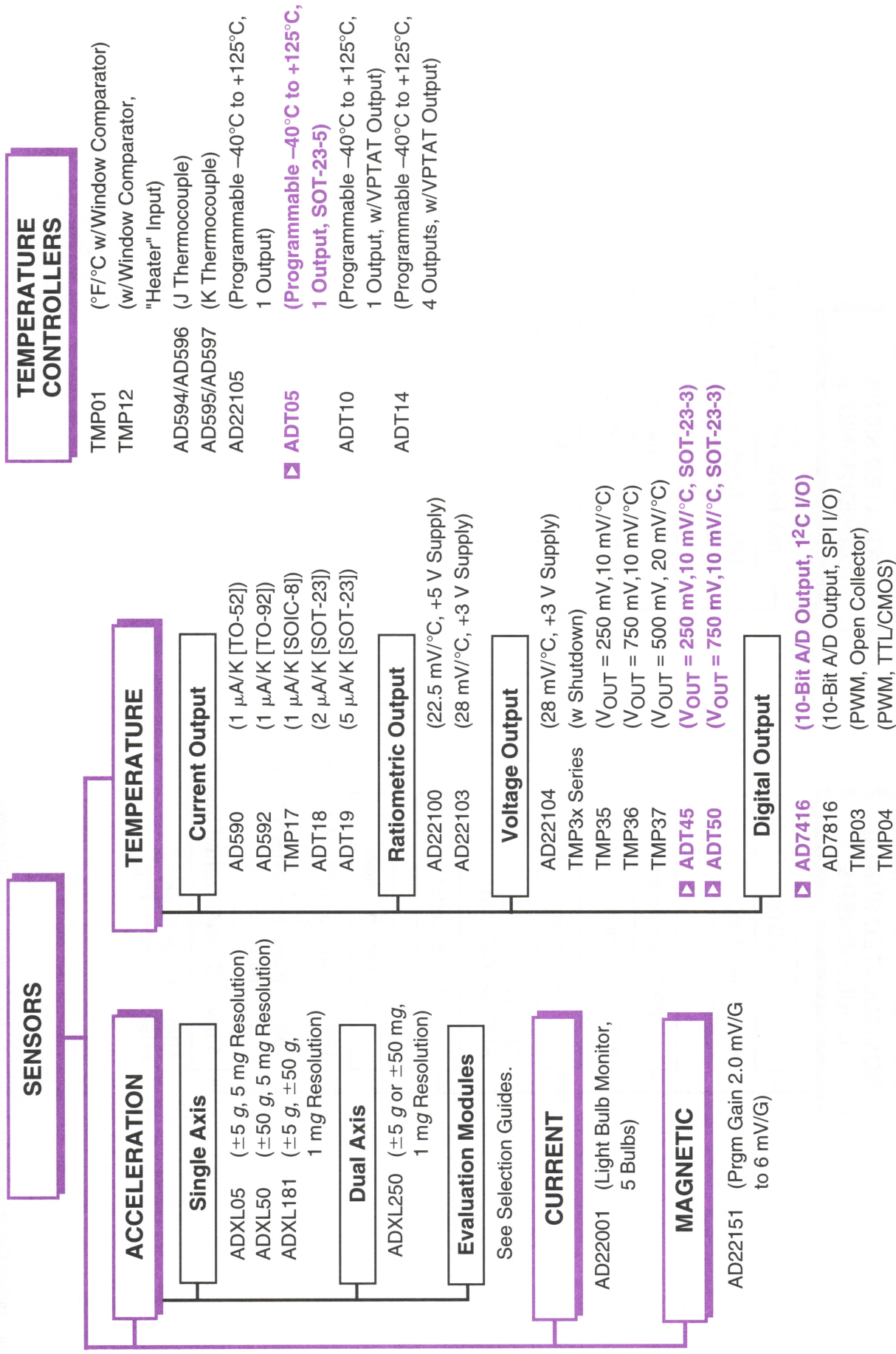
\*One Input, Eight Outputs



# SAMPLE/TRACK & HOLD AMPLIFIERS

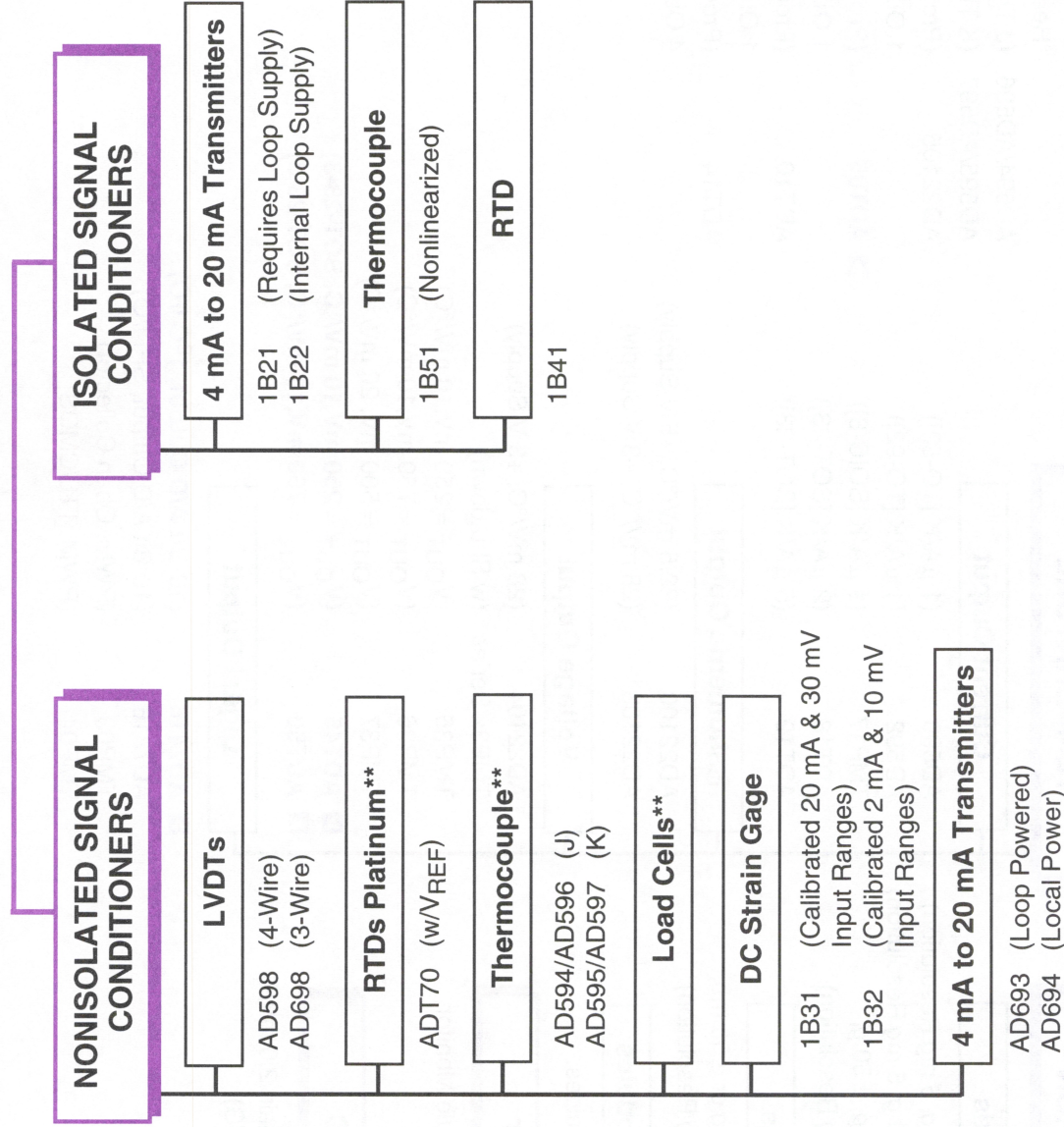
Model	Specified Accuracy %	Acquisition Time ms Max	Aperture Time ns Typ	Aperture Jitter ns Typ	Droop Rate mV/ms Max	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>±2 V Input Range</b>									
AD9100	0.01	0.023	0.8	<0.001	6000	20/28	\$114.35	14-Bit Accurate, 23 ns to 0.01%	1457
AD9101	0.1	0.007	0.5	<0.001	9000	20/28	\$ 38.12	12-Bit Accurate, 7 ns to 0.01%	1458
AD783	0.01	0.375	15	0.01	1	8	\$ 13.20	Single	1361
<b>±5 V Input Range</b>									
AD781	0.01	0.7	25	0.05	1	8	\$ 6.00	Single	1356
AD684	0.01	1.0	20	0.1	1	16	\$ 30.25	Quad, 0 to +10 V Range @ +12 V Rail	1233
<b>±10 V Input Range</b>									
AD585	0.01	3.0	35	0.5	1	14/18	\$ 12.10	With On-Chip Hold Cap	1181
<b>+10 V Input Range</b>									
SMP04	0.01	7.0	NS	NS	0.025	16	\$ 4.29	Quad	1773
SMP08	0.1	7.0	NS	NS	0.02	16	\$ 6.88	Octal, 1 Input, 8 Outputs	1774
SMP18	0.01	3.5	NS	NS	0.04	16	\$ 6.95	Octal, 1 Input, 8 Outputs	1777







# SENSORS & SIGNAL CONDITIONERS



\*See Industrial Catalog for 2B, 3B, 4B, 5B, 6B and 7B Series of Signal Conditioners

\*\*See A/D Section, Sigma-Delta, for Signal Conditioning A/Ds.



## Acceleration Sensors

Model	Power			Noise Floor			Range	Sensitivity	Linearity	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	V <sub>s</sub> V	I <sub>s</sub> mA	BW 10 Hz	mg p-p BW 100 Hz	BW 1 kHz		g	mV/g	% FS typ				
ADXL05	+5	10	2	48	120		±5	220	0.2	10	\$ 24.95	Sensitivity to 500 µg	1846
ADXL50	+5	13	80	400	1300		±50	16.1 to 21.9	0.2	10	\$ 24.95	Frequency Response, DC to 10 kHz	1606
ADXL150	+5	3	2	48	120		640	35 to 41	0.2	14	\$ 12.45	Pin Strap for ±20 g	2060

### Dual Axis

ADXL250	+5	6	2	48	120		±40	35 to 41	0.2	14	\$ 19.95	2 Axis, 0.1° Alignment	2060
---------	----	---	---	----	-----	--	-----	----------	-----	----	----------	------------------------	------

## Evaluation Modules

ADXL05EM1	+5	8	(5 mg DC to 100 Hz)				±4	500	0.2	5	\$ 75.00	Prepackaged 1 Axis	1943
ADXL05EM3	+5	24	(5 mg DC to 100 Hz)				±4	500	0.2	5	\$165.00	Prepackaged 3 Axis	1943
ADXL50EM1	+5	10	(130 mg DC to 400 Hz)				±25	80	0.2	5	\$ 75.00	Prepackaged 1 Axis	1943
ADXL150EM1	+5	3.5	(10 mg DC to 100 Hz)				±10	200	0.2	5	\$125.00	Prepackaged 1 Axis	2143
ADXL150EM3	+5	10	(10 mg DC to 100 Hz)				±10	200	0.2	5	\$240.00	Prepackaged 3 Axis	2143

## Current Sensor

Model	Power		Cold Bulb Test Current µA	Comparator Threshold Voltage mV	Auto Shutdown		Fuse Threshold	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	V <sub>s</sub> V	I <sub>s</sub> mA			V Min	V Max					
AD22001	9 to 30	5	30	2	9	36	4 V	20	\$ 6.39	Light Bulb(s) Monitor	1090

## Magnetic Sensor

Model	Power		t <sub>RISE</sub> /Fall µs	Common-Mode Field µT	DIFF Field µT	Low Speed Range RPM	High Speed Range RPM	Operating Point mm	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	V <sub>s</sub> V	I <sub>s</sub> mA										
AD22151	4.5 to 22	10	3	0 to 400	4 to 75	15	4000	0 to 3.5	8	\$ TBD	Programmable Gain	2240



## Temperature Sensors

Model	Output 25°C	Output Scale Factor	Accuracy +25°C	Linearity °C	Operating Range °C	Digital Output	Supply Range Volts	I <sub>Q</sub> μA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
-------	----------------	------------------------	-------------------	-----------------	--------------------------	-------------------	--------------------------	----------------------	-----------	----------------------------------	----------	--------------

### Current Output

AD590	298.2 μA	1 μA/K	±0.5 μA to 5 μA	1.5	-55 to +150	NA	+4 to +30	I <sub>OUT</sub> = I <sub>Q</sub>	3	\$2.50		1186
AD592	298.2 μA	1 μA/K	±0.5 μA to 1 μA	0.4 to 0.5	-55 to +150	NA	+4 to +30	I <sub>OUT</sub> = I <sub>Q</sub>	3	\$2.21	AD590 in Plastic Pack	1187
TMP17	298.2 μA	1 μA/K	60.5 μA to 1 μA	0.4 to 0.5	-40 to +105	NA	+4 to +30	I <sub>OUT</sub> = I <sub>Q</sub>	8	\$1.10	AD590 in SOIC	2040
ADT18	298.2 μA	2 μA/K	60.5 μA to 1 μA	0.4 to 0.5	-55 to +150	NA	+2.7 to +7	I <sub>OUT</sub> = I <sub>Q</sub>	3	\$1.10		2121
ADT19	298.2 μA	5 μA/K	60.5 μA to 1 μA	0.4 to 0.5	-55 to +150	NA	+2.7 to +7	I <sub>OUT</sub> = I <sub>Q</sub>	3	\$1.10		2121

### Ratiometric Output

AD22100	1.375 V	22.5 mV/°C	±2	1% FS	-50 to +150	NA	+4 to +6	650	3/8	\$2.63	V <sub>OUT</sub> Proportional to V <sub>DD</sub>	1091
AD22103	0.25 V	28 mV/°C	±2	0.5% FS	-50 to +150	NA	+2.7 to +3.6	600	3/8	\$1.48	V <sub>OUT</sub> Proportional to V <sub>DD</sub>	1861

### Voltage Output

TMP35	250 mV	10 mV/°C	±2 to 3°C	0.5	+10 to +125	NA	+2.7 to +5.5	50	3/5/8	\$0.85	I <sub>OUT</sub> = 0.5 μA in Shutdown	1972
TMP36	750 mV	10 mV/°C	±2 to 3°C	0.5	-40 to +125	NA	+2.7 to +5.5	50	3/5/8	\$0.85	I <sub>OUT</sub> = 0.5 μA in Shutdown	1972
TMP37	500 mV	20 mV/°C	±2 to 3°C	0.5	+5 to +100	NA	+2.7 to +5.5	50	3/5/8	\$0.85	I <sub>OUT</sub> = 0.5 μA in Shutdown	1972
▶ ADT45	250 mV	10 mV/°C	3°C	0.5	+10 to +125	NA	+2.7 to +5.5	50	3	\$0.85	LM45 Pinout, 1000 pF Load	2258
▶ ADT50	750 mV	10 mV/°C	3°C	0.5	-40 to +125	NA	+2.7 to +5.5	50	3	\$0.85	LM50 Pinout, 1000 pF Load	2258

### Digital Output (Equations Apply to Both TMP03 & TMP04)

TMP03	35 Hz	°C = 235 - (400 × T1)/T2	±2	±1	-55 to +150	1 Open Col	+4.5 to +7	1000	3/8	\$2.95	PWM Output	1850
TMP04	35 Hz	°F = 455 - (720 × T1)/T2	±2	±1	-55 to +150	TTL/CMOS	+4.5 to +7	1000	3/8	\$2.95	PWM Output	1850
AD7416	10 Bits	10-Bit A/D	±2, ±3	1 Bit	-40 to +85	I <sup>2</sup> C	+2.7 to +5.5	1500	16	\$1.72	40 μW Shutdown, SPI I/O	2092
AD7816	10 Bits	10-Bit A/D	±2, ±3	1 Bit	-40 to +85	Serial	+2.7 to +5.5	1500	16	\$1.72	40 μW Shutdown, SPI I/O	2209



## Temperature Controllers

Model	Output 25°C	Output Scale Factor	Accuracy +25°C	Linearity °C	Operating Range °C	Digital Output	Supply Range Volts	I <sub>Q</sub> μA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD22105	NA	NA	±2	NA	-40 to +150	1 Open Col	+2.7 to +7		6/8	\$1.37	User Programmable Thermostat	1974
TMP12	NA	NA	±3	0.5 typ	-40 to +125	2 Open Col	+4.5 to +12	600	8	\$1.95	Controller, with Window Comparator Heater Input, and Resistor Prgm Hysteresis	1970
ADT10	750 mV	10 mV/°C	±2	0.5 typ	-40 to +125	1 Open Col	+2.7 to +5.5	100	8	\$1.60	Single Setpoint Control	2025
ADT14	+2.5 V	5 mV/°C	±3	0.5 typ	-40 to +125	4 Open Col	+4.5 to +5.5	500	16	\$2.22	Quad Setpoint	2026
TMP01	1.49 V	5 mV/K	±1.5 ± -3	0.5 typ	-55 to +150	2 Open Col	+4.5 to +13.2	800	8	\$2.31	With Temperature Output	1807
AD594	0.25	10 mV/°C	1 to 3		+25 to +100	1 Open Col	+5 to ±15	300	14	\$7.28	J Thermocouple	1189
AD595	0.25	10 mV/°C	1 to 3		+25 to +100	1 Open Col	+5 to ±15	300	14	\$7.28	K Thermocouple	1189
AD596	0.282	10 mV/°C	4		+25 to +100	1 Open Col	+5 to ±15	160	8/10	\$8.09	J Thermocouple	1190
AD597	0.282	10 mV/°C	4		+25 to +100	1 Open Col	+5 to ±15	160	8/10	\$4.15	K Thermocouple	1190
ADT05	NA	NA	4	NA	-40 to +150	1 Open Col	+2.7 to +7		6/8	\$TBD	User Programmable Thermostat	2121

■ = New Product since 1997 Short Form Designers' Guide.



# SENSORS & SIGNAL CONDITIONERS

## Nonisolated Signal Conditioners

### Thermocouples

Model	Output 25°C	Output Scale Factor	Accuracy +25°C	Operating Range °C	Digital Output	Supply Range Volts	I <sub>0</sub> μA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
AD594	0.25	10 mV/°C	1 to 3	+25 to +100	1 Open Col	+5 to ±15	300	14	\$ 7.28	J Thermocouple	1188
AD595	0.25	10 mV/°C	1 to 3	+25 to +100	1 Open Col	+5 to ±15	300	14	\$ 7.28	K Thermocouple	1188
AD596	0.282	10 mV/°C	4	+25 to +100	1 Open Col	+5 to ±15	160	8/10	\$ 8.09	J Thermocouple	1190
AD597	0.282	10 mV/°C	4	+25 to +100	1 Open Col	+5 to ±15	160	8/10	\$ 4.15	K Thermocouple	1190

### DC Strain Gage

Model	Power +V <sub>cc</sub> Volts	CMV Volts rms	CMR dB Min	Accuracy ±% Max	Input Range Volts	Int V <sub>REF</sub>	Output Range mA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
1B32	±15 @ 4 mA	±7.5	140	0.05 to 0.01	See Data Sheet	Y	See D/S	NA	\$71.54		1004
1B31	±15 @ 10 mA	±12	100	0.015 to 0.3	See Data Sheet	Y	See D/S	NA	\$60.19		1003

### RTDs, Platinum

Model	Instrument E <sub>os</sub> RTI	Amp E <sub>os</sub> RTO	Output Amp E <sub>os</sub>	V <sub>REF</sub> Volts	V <sub>cc</sub> Volts	I <sub>0</sub> mA	# Current Sources	# Pins	Lowest Grade Price 100s	Comments	Fax- code
ADT70F	200 μV	500 μV	50 μV	+2.5	+5	3	2 @ 1 mA	20	\$ 4.85	±0.5 mA I <sub>Cs</sub> Mismatch	2123
ADT70G	500 μV	1000 μV	50 μV	+2.5	+5	3	2 @ 1 mA	20	\$ 7.43	±0.5 mA I <sub>Cs</sub> Mismatch	2123

### 4 mA to 20 mA Transmitters

AD693*	+12 to +36 @ 0.7 mA	V <sub>cc</sub> to 4 V	80	0.05 to 0.07	@ 30 mV/60 mV	Y	0, 4 to 20	20	\$ 13.36	Calibrated 30/60 mV Input Spans	1235
AD694J/A	+4.5 to +36 @ 2 mA	NA	NA	0.015 to 0.3	or 0 to +2	Y	0, 4 to 20	16	\$ 4.97	Calibrated 2/10 V Input Spans	1236

### LVTDs

See MOTION CONTROL section.



Model	Power +V <sub>CC</sub> Volts	CMV Volts rms	CMR dB Min	Accuracy ± % Max	Input Range Volts	Int V <sub>REF</sub>	Output Range mA	# Pins	Lowest Grade Price 100s	Comments	Fax- code
-------	------------------------------------	---------------------	------------------	---------------------	-------------------------	-------------------------	-----------------------	-----------	----------------------------------	----------	--------------

## Isolated Signal Conditioners

### 4 mA to 20 mA Transmitters

1B21	±15 @ 100 mA	1500	90	0.05	See Data Sheet	Y	0, 4 to 20	NA	\$ 55.64	Footprint, See Data Sheet	1001
1B22	±15 @ 7.5 mA	1500	90	0.05	See Data Sheet	N	0, 4 to 20	NA	\$ 74.95	Footprint, See Data Sheet	1002

### Thermocouple

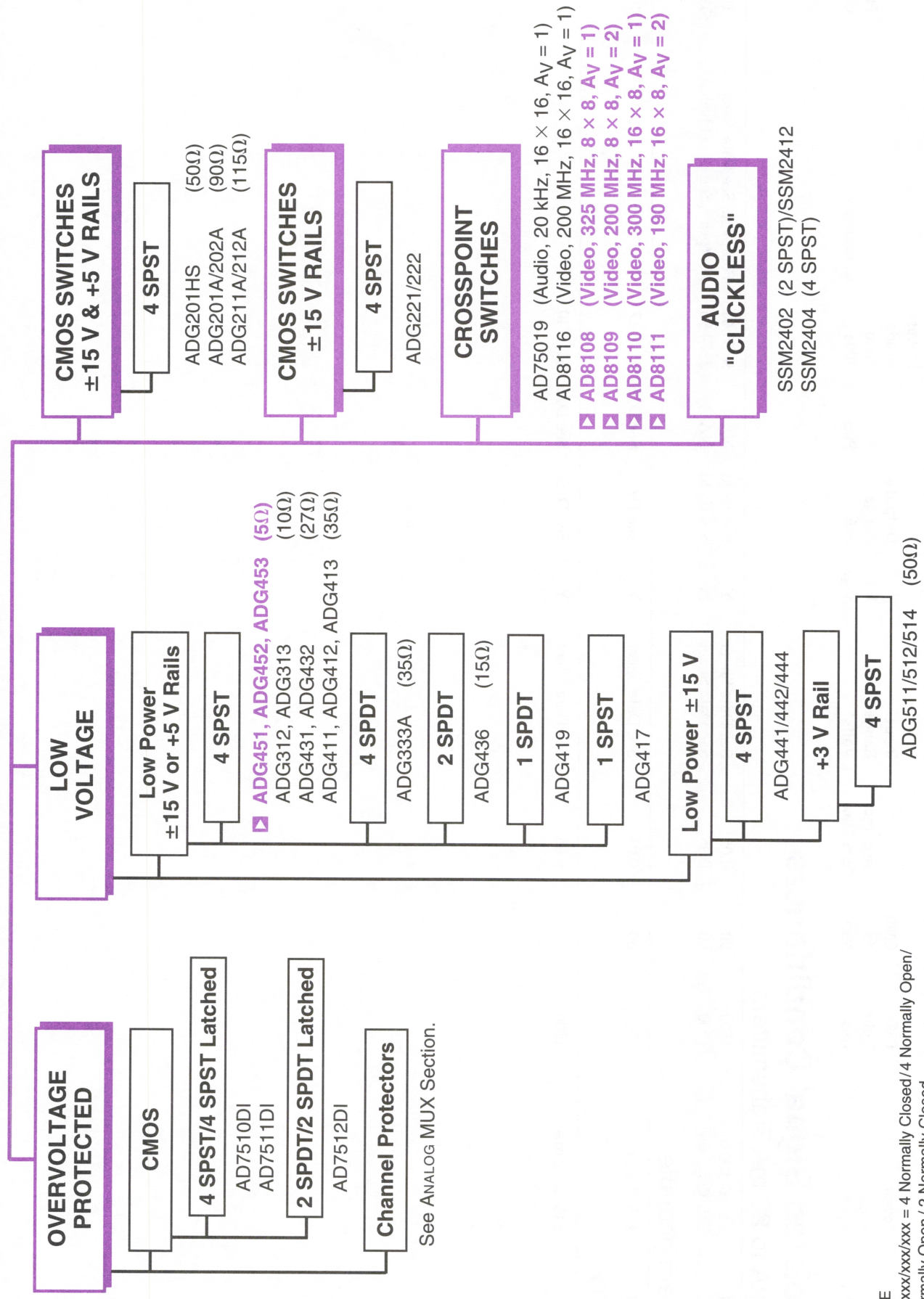
1B51	±15 @ 12 mA	1500	60	0.05	See Data Sheet	Y	See D/S	See D/S	\$ 95.17		1006
------	-------------	------	----	------	----------------	---	---------	---------	----------	--	------

### RTD

1B41	±15 @ 12 mA	1500	60	0.05	See Data Sheet	Y	See D/S	See D/S	\$112.40		1005
------	-------------	------	----	------	----------------	---	---------	---------	----------	--	------



# SWITCHES



## NOTE

ADGxxx/xxx/xxx = 4 Normally Closed / 4 Normally Open /  
2 Normally Open / 2 Normally Closed.

▣ = New Product since 1997 Short Form Designers' Guide.



# SWITCHES

Model	Type	Rail for Specs Volts	I <sub>DD</sub> max mA	I <sub>SS</sub> max mA	R <sub>ON</sub> max Ohms	I <sub>S</sub> Off nA	t <sub>ON</sub> ns	t <sub>OFF</sub> ns	# Pins	Lowest Grade Price 100s	Comments	Fax-code
<b>CMOS Switches</b>												
ADG201A/ADG202A	4 SPST	±15	2	0.2	90	2	300	250	16	\$2.68		1492
ADG201HS	4 SPST	±15	6	2	50	1	75	75	16	\$3.10	High Speed	1493
ADG211A/ADG212A	4 SPST	±15, +5	1	0.2	115	5	600	450	16	\$1.60		1495
ADG221/ADG222	4 SPST	±15	1.5	0.2	90	2	300	250	16	\$2.41	With Input Latch	1497

## JFET "Clickless" Switches

SSM2402/SSM2412	2 SPST	±12	6	7	85	10	10/3.5	4/1.5	16	\$3.53	Off Isolation 120 dB	1801
SSM2404	4 SPST	±12	0.6	0.9	28	20	50 ms	30 ms	16	\$3.45	THD+N = 0.0008%	1802

## Low Leakage

ADG419	1 SPDT	±15, +5	0.001	0.001	25	0.1	100	60	8	\$1.50		1506
ADG417	1 SPST	±15, +5	0.001	0.001	25	0.1	100	60	8	\$1.20		1844
ADG436	2 SPDT	±15	0.25	0.05	15	0.5	110	100	16	\$2.95		1918
ADG411/ADG412/ADG413	4 SPST	±15, +5	0.005	0.00	35	0.25	110	100	16	\$2.29		1503
ADG441/ADG442/ADG444	4 SPST	±15	0.1	0.005	85	0.5	150	150	16	\$2.05		1513
ADG431/ADG432/ADG433	4 SPST	±15, +5	0.03	0.03	24	0.25	90	0.06	16	\$2.29		1510
ADG511/ADG512/ADG513	4 SPST	±5	0.005	0.005	50	0.25	200	120	16	\$2.40		1520
ADG333A	4 SPST	±15, +12	0.25	0.001	45	0.25	175	145	20	\$3.97	Low Distortion	1973
ADG451/ADG452/ADG453	4 SPST	±15, +5	0.005	0.005	5	0.5	180	140	16	\$2.29	2K ESD	2196

## Single Supply Operation

Model	Type	Rail for Specs Volts	I <sub>DD</sub> max mA	I <sub>S</sub> Off nA	R <sub>ON</sub> max Ohms	t <sub>ON</sub> ns	t <sub>OFF</sub> ns	# Pins	Lowest Grade Price 100s	Comments	Fax-code
ADG419	1 SPDT	+12	0.001	0.25	70	250	250	8	\$1.50		1506
ADG417	1 SPST	+12	0.001	0.25	70	150	85	8	\$1.20		1844
ADG441/ADG442	4 SPST	+12	0.1	0.5	160	300	60	16	\$2.05		1513
ADG511/ADG512/ADG513	4 SPST	+5	0.005	0.25	75	200	50	16	\$2.40		1520
ADG511/ADG512/ADG513	4 SPST	+3	0.005		200	500	100	16	\$2.40		1520



## V/F & F/V CONVERTERS

### Nonsynchronous

- AD537 (150 kHz, w/Sq Wave Output)
- AD654 (500 kHz, w/Sq Wave Output)
- ADVFC32 (500 kHz)
- AD650 (1 MHz)

### Synchronous

- AD652 (2 MHz Clock)
- AD7741 (5 MHz Clock)
- AD7742 (5 MHz Clock, Bipolar Input)

### Power Meter

See POWER MANAGEMENT Section.



# V/F & F/V CONVERTERS

## Nonsynchronous Operation

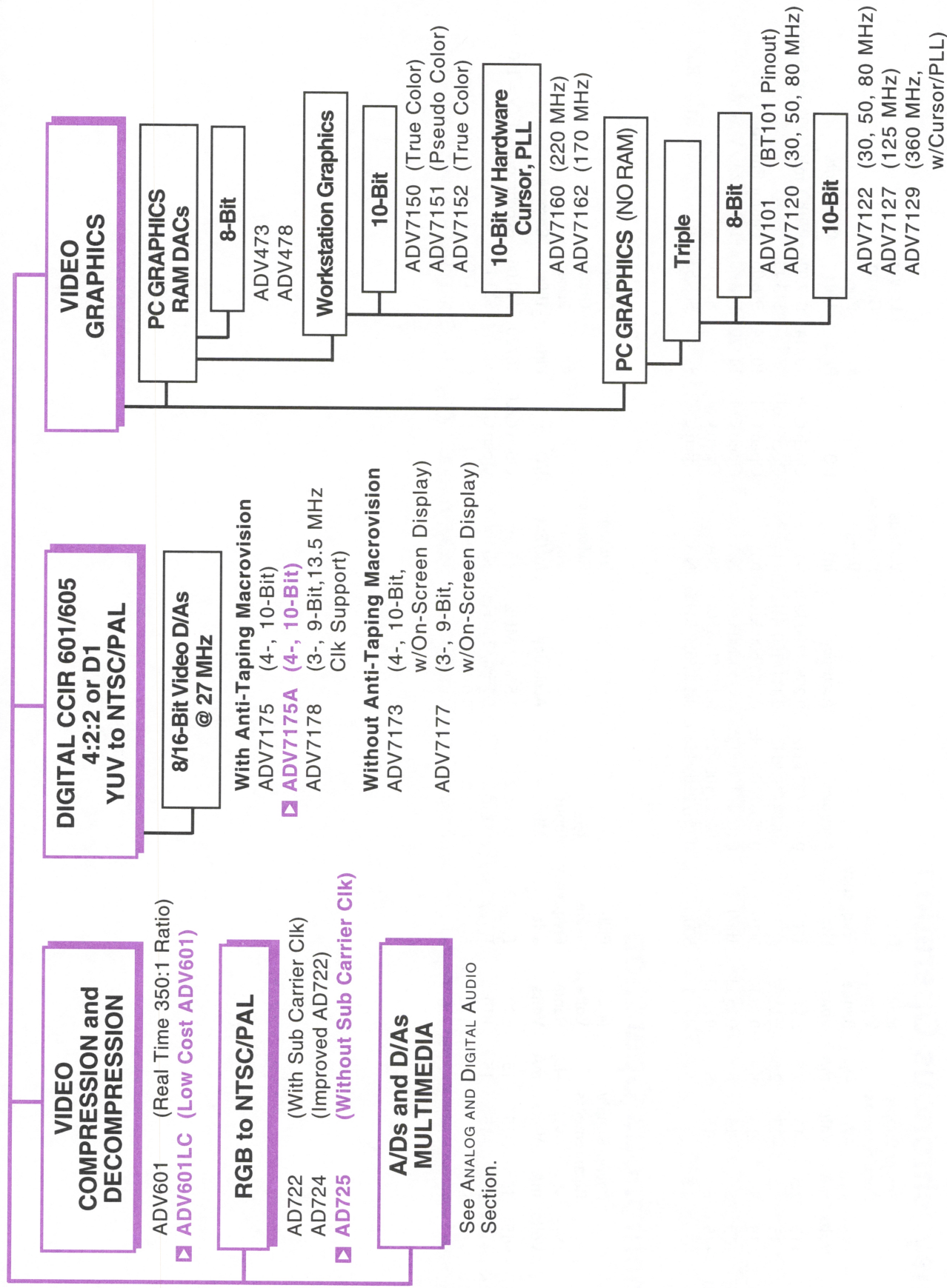
Model	Power Supply Requirements			Input Voltage Range	Full-Scale Frequency	Accuracy		Voltage Reference	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	+V <sub>CC</sub> Volts	+I <sub>CC</sub> mA	-V <sub>EE</sub> Volts	-I <sub>EE</sub> mA	kHz	Accuracy	Accuracy						
AD537J	+15	2.5	-15	2.5	150	0.15%/10 kHz	0.25%/100 kHz	+1	Open Col	10/14	\$ 7.92	With 1 mV/K Temp Sensor	1148
AD537K	+15	2.5	-15	2.5	150	0.07%/10 kHz	0.1%/100 kHz	+1	Open Col		\$13.43		
ADVFC32	+15	8	-15	8	500	0.05%/100 kHz	0.2%/500 kHz	NA	Open Col	10/14	\$ 6.05	Pin for Pin BB VFC32	1605
AD650J	+15	8	-15	8	1000	0.02%/100 kHz	ns @ 1 MHz	NA	Open Col	14/20	\$ 8.00	100 kHz F/V Mode	1214
AD650K	+15	8	-15	8	1000	0.02%/100 kHz	0.1%/1 MHz	NA	Open Col		\$10.00		
AD654	+5	2.5			500	0.1%/250 kHz	0.4%/500 kHz	NA	Open C&E	8	\$ 3.63	+5 V, +5 V or ±15 V Rails	1216

## Synchronous Operation

Model	Power Supply Requirements			Input Voltage Range	Full-Scale Frequency	f <sub>CLK</sub> Input MHz	Accuracy	Voltage Reference	Int/Ext	I/O	# Pins	Lowest Grade Price 100s	Comments	Fax-code
	+V <sub>CC</sub> Volts	+I <sub>CC</sub> mA	-V <sub>EE</sub> Volts	-I <sub>EE</sub> mA	kHz									
AD652J	+15	15	-15	15	F <sub>CLK</sub> /2	0.1 to 2	1.5%/2 MHz	+5 Int	+5 Int	Open C&E	16/20	\$10.06	Synchronous, F/V = 100 kHz	1215
AD652K	+15	15	-15	15	F <sub>CLK</sub> /2	0.1 to 2	0.75%/2 MHz	+5 Int	+5 Int	Open C&E		\$13.11		
AD7541	+5	8			F <sub>CLK</sub> /2	0.1 to 2	0.012/5 MHz	+2.5 Ext	+2.5 Ext	TTL	8	\$ TBD	Single Channel Input	2187
AD7542	+5	8			F <sub>CLK</sub> /2	0.1 to 2	0.012/5 MHz	+2.5 Ext	+2.5 Ext	TTL	16	\$ TBD	4-Channel Input	2188

▣ = New Product since 1997 Short Form Designers' Guide.







## RGB to NTSC/PAL Converters

Model	Power		LUMA		Composite Output					Lowest Grade Price 100s	Comments	Fax-code
	V <sub>ss</sub> V	I <sub>ss</sub> mA	Gain BW MHz	Error %	Gain Linearity %	Diff Gain Error ±%	Diff Phase °	Gain %	# Pins			
AD722	+5	40	5	5	0.6	5	2	0.5	16	\$ 6.06	With Subcarrier Clock Generator	1909
AD724	+5	42	5	5	0.3	15	2	0.5	16	\$ 5.69	AD722 with Improved Performance	2056
▶ AD725	+5	36	4.4	7	0.3	0.5	1.5	3	16	\$ 5.25	Without Subcarrier Clock Generator	2302

## Digital CCIR-601 to PAL/NTSC Video Encoders\*

NTSC/PAL Digital Video Encoder Product Family	ADV7175	ADV7176	ADV7175A	ADV7176A	ADV7177	ADV7178	ADV7174
Number of DACs	4	4	4	4	3	3	4
DAC Resolution	10	10	10	10	9	9	10
13.5 MHz Clock Out Support					X	X	
On Screen Display (OSD)					X	X	X
X-TAL Input					X	X	X
Cr/Cb Priority Switch	M	M	M/S	M/S	M/S	M/S	M/S
VBI Passthru (Teletext/Extended Data Services)	S	S	M/S	M/S	M/S	M/S	M/S
Normal (N)/Advanced (A) Filter Modes	A	A	A	A	A	A	A
Teletext Insertion			X	X			X
RTCC (Genlock)	X	X	X	X			X
SCART (RGB + Composite)	X	X	X	X			X
YUV Output	X	X	X	X			X
Macrovision (Anticopy) [Also on SCART]	Rev 6.1		Rev 7.01			Rev 7.01	
WSS (Wide Screen Signaling)							
Primary Target Market	EU Set-Top	EU Set-Top	EU Set-Top/DVD	EU Set-Top/DVD	Video CD	US Set-Top/DVD	US Set-Top/DVD
Power Supply I <sub>Q</sub> = 300 mA	+3.3 V to +5 V	+3.3 V to +5 V	+3.3 V to +5 V	+3.3 V to +5 V	+3.3 V to +5 V	+3.3 V to +5 V	+3.3 V to +5 V
Package	44-PQFP	44-PQFP	44-PQFP	44-PQFP	44-PQFP	44-PQFP	44-PQFP
Lowest Grade 100 Piece Price	\$11.38	\$11.38	\$11.38	\$11.38	\$11.38	\$11.38	\$11.38
Faxcode	1948	1948	2246	2246	2247	2247	2245

\* Must have Macrovision license to purchase.

S: Available in Slave Mode Only. M/S: Available in Master and Slave Mode.

■ = New Product since 1997 Short Form Designers' Guide.



## Video Graphics

Model	# Bits	Power Supply Requirements		I <sub>OUT</sub> mA	Update Rate, MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Volts	mA						
Triple Video D/As, RS-343/RS-170									
ADV101	8	+5	125	22	30/50/80	44	\$ 22.00	30 pV/sec Glitch	1586
ADV7120	8	+5	125	22	30/50/80	40/44	\$ 6.27	ADV7120, in BT101 Pinout	1595
▶ ADV7123	8/10	+3 to +5				44	\$ 8.15	w/V <sub>REF</sub> and Power-Down: Pin with ADV7120/ADV7122	2243
ADV7122	10	+5	125	22	30/50/80	44	\$ 8.15	ADV7121, With Blank and Sync Pin	1596

### Triple Pseudo Color RAM D/As, RS-343/RS-170

ADV476	6	+5	220	21	33/50/66	28/44	\$ 4.50	With Blank on all 3 CHs, Pins with INMOS 171, 176	1592
ADV471	6	+5	220	21	35/50/66/80	44	\$ 4.80	With 15 × 24 Overlay Register, Sync on All 3 CHs	1589
ADV453	8	+5	220	21	40, 66	40/44	\$ 35.00	With 3 × 24 Overlay Register	1587
ADV458	8	+5	370	21	110/165	84	\$ 25.00	With Read and Blank Masks, 4:1, 5:1 Pixel Ports	1588
ADV478	8	+5	220	21	35/50/66/80	44	\$ 10.00	With 15 × 24 Overlay Register, Sync on All 3 CHs	1589
ADV7151	10	+5	450	21	85/110-220	100	\$ 48.00	With Clock Control, 3 Palette RAMS, 1:1, 2:1, 4:1 Pixel Port	1603

### Triple True Color RAM D/As, RS-343/RS-170

ADV473	8	+5	400	21	66/135	68	\$ 22.11	With 15 × 28 Overlay Register, Sync on All 3 CHs, $V_{REF}$	1590
ADV7129	10	+5	500	40	360	304	\$765.00	10 Bit, 360 MHz, 192-Bit Pixel Port 8:1 Mux, True Color, w/Cursor	1854
ADV7150	10	5	400	20	110/220	160	\$145.20	Mux Pixel Ports 1:1, 2:1, 4:1	1602
ADV7152	10	5	400	20	110/220	100	\$127.71	Mux Pixel Ports 1:1, 2:1	1604
ADV7160	10	5	450	20	110/220	160	\$ 90.87	Windows 64 × 64 Hardware Cursor, 96-Bit Pixel Port 2:1, 4:1, 8:1, (1600 × 1280 × 24 & 85 Hz), PLL	1851
ADV7162	10	5	450	20	110/220	160	\$ 34.55	Windows 64 × 64 Hardware Cursor, 96-Bit Pixel Port 2:1, 4:1, 8:1, (1600 × 1280 × 24 & 85 Hz), PLL	1851

### Single Video D/As, RS-343/RS-170

▶ ADV7127	10	+3.3 to +5	35	18.5	125	48	\$ TBD	Int $V_{REF}$ , -48 dB SFDR, w/Shutdown	2244
▶ ADV7128	10	+5	125	18.5	30/50/80	40	\$ 8.15	See ADV7127 for New Designs.	1598

## Video Compression & Decompression

Model	# Bits	Power Supply Requirements		I <sub>OUT</sub> mA	Update Rate, MHz	# Pins	Lowest Grade Price 100s	Comments	Fax-code
		Volts	mA						
ADV601	See Data Sheet for Specifications.						CF	350:1 Compression of CCIR-601 Digital Video	2011
▶ ADV601LC	See Data Sheet for Specifications.					120	CF		2450

▶ = New Product since 1997 Short Form Designers' Guide.



## CONTENTS

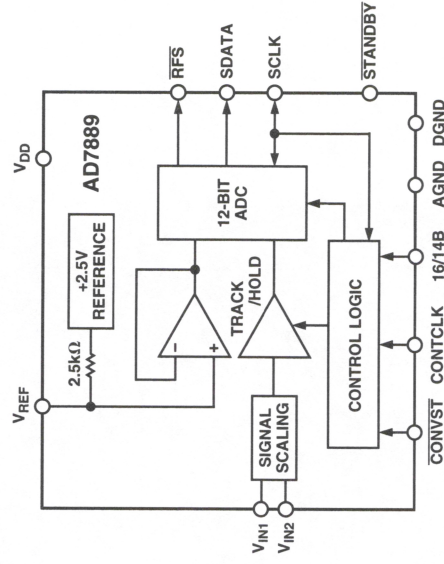
A/D Converters .....	184
Amplifiers .....	192
Communications .....	196
D/A Converters .....	198
Digital Signal Processing .....	201
Interface: Line Receivers & Transmitters .....	203
LANs: Local/Wide Area Networks .....	204
Motion Control .....	206
μProcessor Supervisory Circuits & Reset Generators .....	207
Power Management .....	210
Sensors & Signal Conditioners .....	216
Switches .....	218
Video & Multimedia .....	221



# A/D CONVERTERS

## <1 MSPS Sampling w/Track and Hold, Single Supply

### LC<sup>2</sup>MOS Single Supply, 12-Bit 600 kSPS ADC



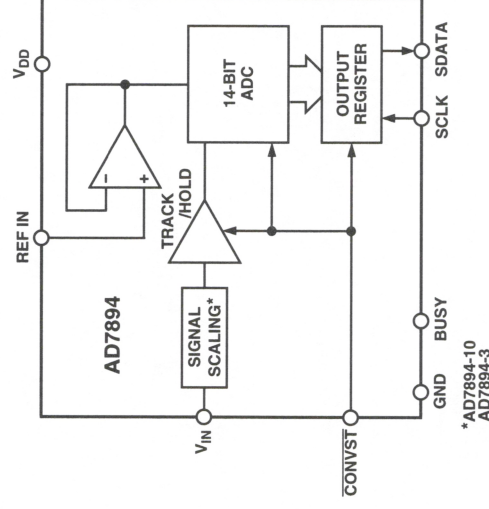
### AD7889

#### FEATURES

Fast 12-Bit ADC with 1.4  $\mu$ s Conversion Time  
Up to 600 kSPS Throughput Rate (Mode A)  
Single Supply Operation  
On-Chip Track/Hold Amplifier  
Selection of Input Ranges:  
 $\pm 10$  V or  $\pm 5$  V for AD7889-1  
0 V to +2.5 V or 0 V to +5 V for AD7889-2  
 $\pm 2.5$  V for AD7889-3  
High Speed Serial Interface  
Low Power, 60 mW typ

☒ Faxcode 2202

### 5 V, 14-Bit, Serial 4.5 $\mu$ s ADC in 8-Pin Package



### AD7894

#### FEATURES

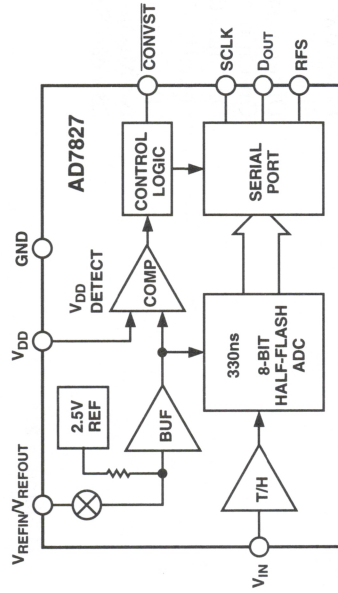
Fast 14-Bit ADC with 4.5  $\mu$ s Conversion Time  
8-Pin SOIC Package  
Single 5 V Supply Operation  
High Speed, Easy-to-Use, Serial Interface  
On-Chip Track/Hold Amplifier  
Selection of Input Ranges:  
 $\pm 10$  V for AD7894-10  
 $\pm 2.5$  V for AD7894-3  
0 V to +2.5 V for AD7894-2  
High Input Impedance  
Low Power: 20 mW typ

☒ Faxcode 2157



>1 MSPS < 20 MSPS

## 3 V/5 V, 1 MSPS, 8-Bit, Serial Interface Sampling ADC



### AD7827

#### FEATURES

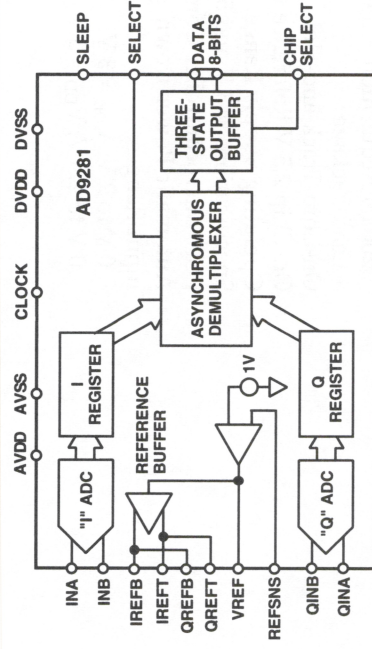
- 8-Bit Half-Flash ADC with 420 ns Conversion Time
- 200 ns Acquisition Time
- 8-Lead Package
- On-Chip Track-and-Hold
- On-Chip 2.5 V Reference with 2% Tolerance
- Operating Supply Range: 3 V  $\pm$  10% and 5 V  $\pm$  10%
- Specifications @ 3 V and 5 V
- DSP/Microcontroller Compatible Serial Interface
- Automatic Power-Down at End of Conversion
- Input Ranges:
  - 0 V to 2 V,  $V_{DD} = 3$  V
  - 0 V to 2.5 V,  $V_{DD} = 5$  V

☐ Faxcode 2238



>20 MSPS

## Dual Channel 8-Bit Resolution CMOS ADC



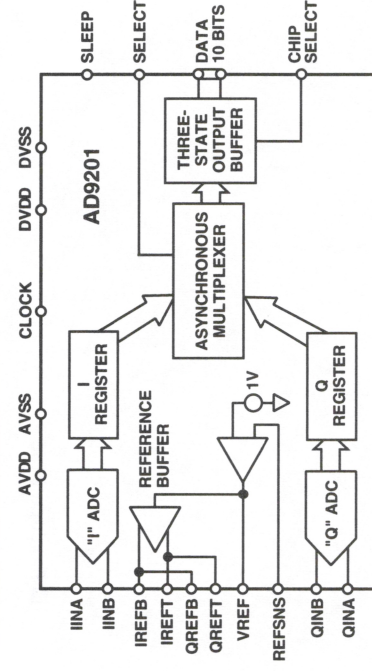
### AD9281

#### FEATURES

- Complete Dual ADC
- Low Power Dissipation: 175 mW (+3 V Supply)
- Single Supply: 2.7 V to 5.5 V
- Differential Nonlinearity Error: 0.5 LSB
- On-Chip Analog Input Buffers
- On-Chip Reference
- Signal-to-Noise Ratio: 48 dB
- Spurious-Free Dynamic Range: -62 dB
- No Missing Codes Guaranteed
- 28-Lead SSOP

☐ Faxcode 2117

## Dual Channel 10-Bit Resolution CMOS ADC



### AD9201

#### FEATURES

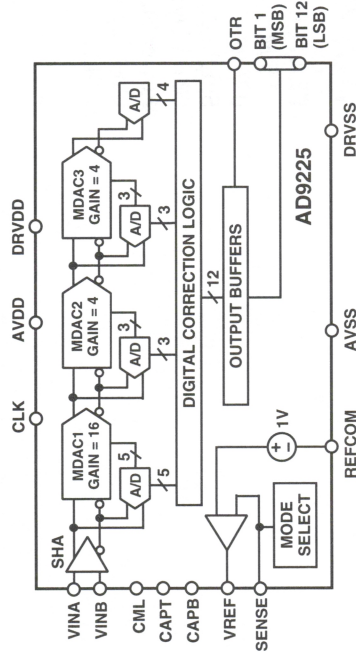
- Complete Dual ADC
- Low Power Dissipation: 175 mW (+3 V Supply)
- Single Supply: 2.7 V to 5.5 V
- Differential Nonlinearity Error: 0.5 LSB
- On-Chip Analog Input Buffers
- On-Chip Reference
- Signal-to-Noise Ratio: 58 dB
- Spurious-Free Dynamic Range: -68 dB
- No Missing Codes Guaranteed
- 28-Lead SSOP

☐ Faxcode 2116



>20 MSPS

## Complete 12-Bit, 25 MSPS Monolithic A/D Converter



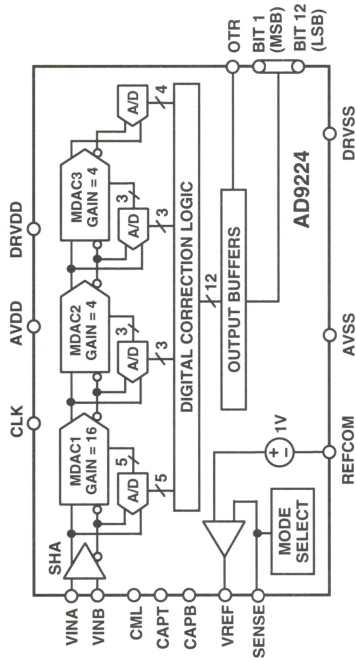
### AD9225

#### FEATURES

- Monolithic 12-Bit, 25 MSPS A/D Converter
- Low Power Dissipation: 300 mW
- Single +5 V Supply
- No Missing Codes Guaranteed
- Differential Nonlinearity Error:  $\pm 0.5$  LSB
- Complete: On-Chip Sample-and-Hold Amplifier and Voltage Reference
- Signal-to-Noise and Distortion Ratio: 70 dB
- Spurious-Free Dynamic Range: 80 dB
- Out-of-Range Indicator
- Straight Binary Output Data
- 28-Lead SSOP

☐ Faxcode 2166

## Complete 12-Bit, 40 MSPS Monolithic A/D Converter



### AD9224

#### FEATURES

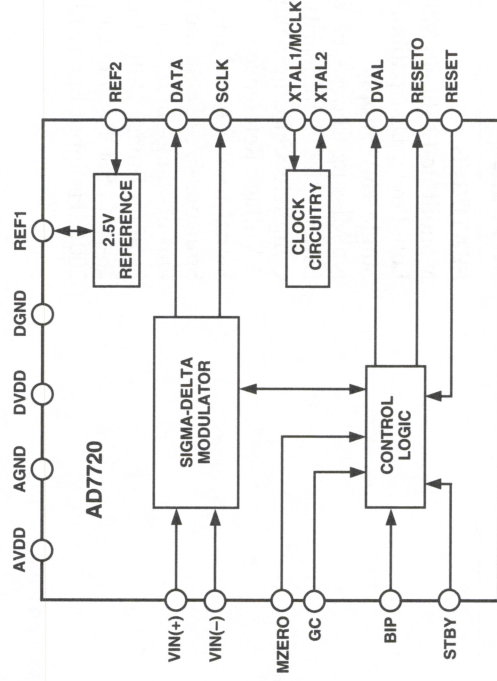
- Monolithic 12-Bit, 40 MSPS A/D Converter
- Low Power Dissipation: 390 mW
- Single +5 V Supply
- No Missing Codes Guaranteed
- Differential Nonlinearity Error:  $\pm 0.5$  LSB
- Complete: On-Chip Sample-and-Hold Amplifier and Voltage Reference
- Signal-to-Noise and Distortion Ratio: 65 dB
- Spurious-Free Dynamic Range: 73 dB
- Out-of-Range Indicator
- Straight Binary Output Data
- 28-Lead SSOP/28-Lead SOIC
- 200 MHz Input Bandwidth

☐ Faxcode 2165



## Sigma-Delta Modulator

### CMOS Sigma-Delta Modulator



### AD7720

#### FEATURES

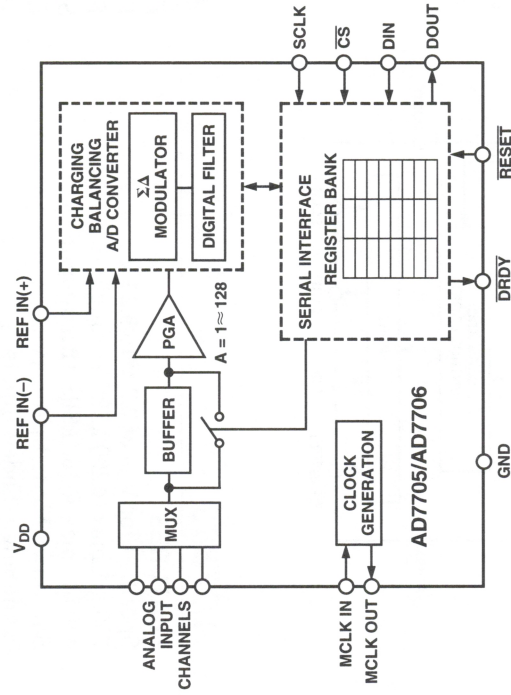
- 12.5 MHz Master Clock Frequency
- 0 V to +2.5 V or  $\pm 1.25$  V Input Range
- Single Bit Output Stream
- 90 dB Dynamic Range
- Power Supplies:  $AV_{DD}$ ,  $DV_{DD}$ : +5 V  $\pm$  5%
- On-Chip 2.5 V Voltage Reference
- 28-Lead TSSOP

☐ Faxcode 2431



## Sigma-Delta: Transducer Interface

**3 V/5 V, 450  $\mu$ A 2-Channel, 16-Bit, Sigma-Delta ADC**



### AD7705/AD7706

#### FEATURES

- AD7705: Two-Fully Differential Input Channel ADC
- AD7706: Three-Pseudo Differential Input Channel ADC
- 16 Bits No Missing Codes
- 0.012% Nonlinearity
- Programmable Gain Front End
- Gains from 1 to 128
- Three-Wire Serial Interface
- Schmitt Trigger Input on SCLK
- Ability to Buffer the Analog Input
- 2.7 V to 3.3 V or 4.75 V to 5.25 V Operation
- Low Supply Current: 450 mA max @ 3 V Supplies
- 16-Lead DIP and 16-Lead SOIC and TSSOP Packages

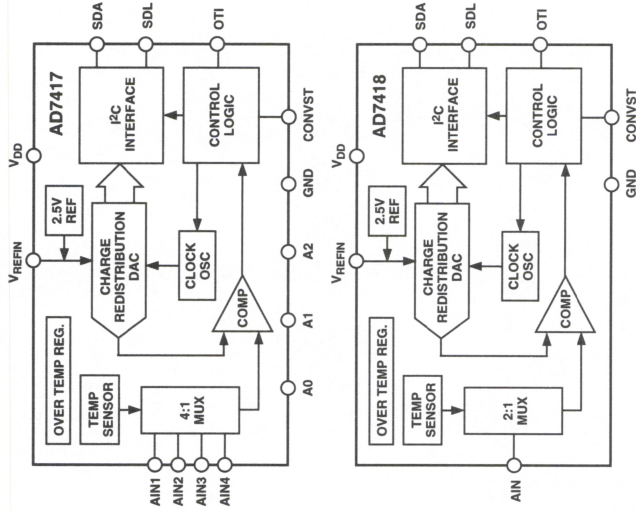
► Faxcode 2156



# A/D CONVERTERS

## Subsystems: Data Acquisition

**I<sup>2</sup>C 10-Bit ADC with On-Chip Temperature Sensor**



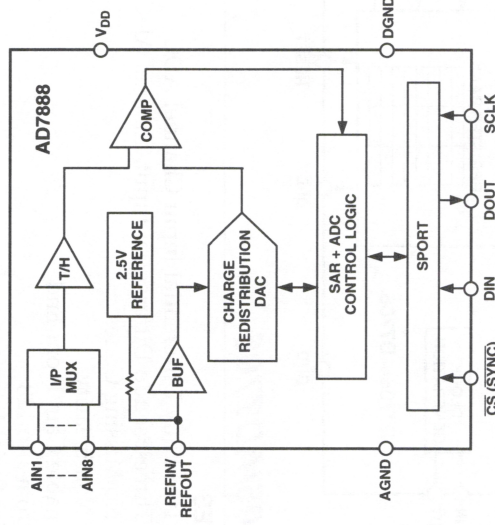
**AD7417/AD7418**

### FEATURES

- 10-Bit ADC with 20  $\mu$ s Conversion Time
- I<sup>2</sup>C Interface
- On-Chip Temperature Sensor  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- On-Chip Reference ( $2.5\text{ V} \pm 1\%$ )
- 2.7 V to 5.5 V Power Supply
- 3.5  $\mu$ W Power Consumption at 10 SPS
- Automatic Power-Down After Conversion
- Over Temperature Interrupt Pin
- 8-Lead microSOIC Package (AD7416/AD7418)
- 10-Lead microSOIC Package (AD7417)

☐ Faxcode 2209

**200 kSPS, 12-Bit ADC in 16-Lead TSSOP**



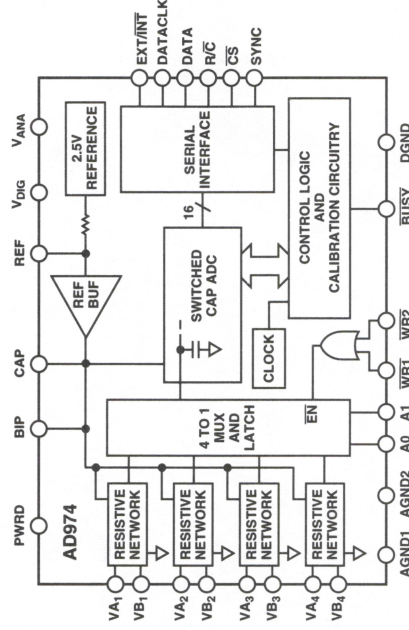
**AD7888**

### FEATURES

- Specified for  $V_{\text{DD}}$  of 2.7 V to 5.25 V
- 700  $\mu\text{A}$  max @ 200 kSPS Throughput
- 450  $\mu\text{A}$  max @ 100 kSPS Throughput
- Shutdown Mode 1  $\mu\text{A}$  max
- Eight Single-Ended Inputs
- Serial Interface: SPI/QSPI/ $\mu$ Wire
- 16-Lead Narrow SOIC and TSSOP Packages

☐ Faxcode 1985

**4-Channel, 16-Bit, 200 kSPS Data Acquisition System**



**AD974**

### FEATURES

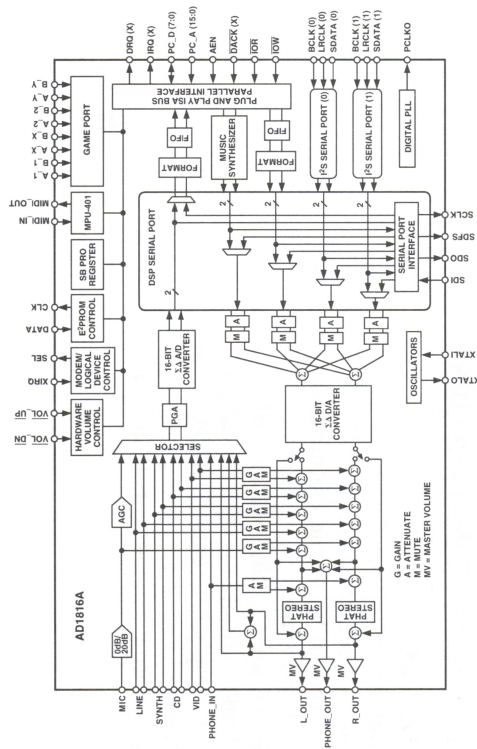
- Fast 16-Bit ADC with 200 kSPS Throughput
- Four Single-Ended Analog Input Channels
- Single 5 V Supply Operation
- Input Ranges: 0 V to 4 V, 0 V to 5 V and  $\pm 10\text{ V}$
- 100 mW Max Power Dissipation
- Choice of External or Internal 2.5 V Reference
- On-Chip Clock
- Power-Down Mode

☐ Faxcode 1985



## Stereo Codecs

### Soundport® Controller



### AD1816A

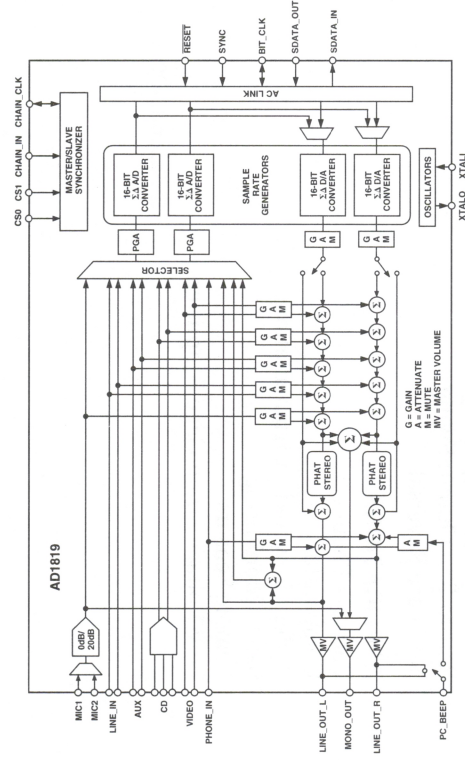
#### FEATURES

- Compatible with Microsoft® PC 97 Logo Requirements
- Supports Applications Written for Windows® 95, Windows 3.1, Windows NT, SoundBlaster® Pro, AdLib®/OPL3®
- Stereo Audio 16-Bit SD Codec
- Internal 3D Circuit—Phat™ Stereo Phase Expander
- MPC Level-3 Mixer
- ISA Plug and Play Compatible
- 16-Bit Address Decode
- Dual Type F FIFO DMA Support
- MPU-401 Compatible MIDI Port
- Supports Wavetable Synthesizers
- Integrated Enhanced Digital Game Port
- Bidirectional DSP Serial Port

Soundport is a registered trademark of Analog Devices, Inc.  
PHAT is a trademark of Analog Devices, Inc.  
All other trademarks are the property of their respective holders.

► Faxcode 2156

### AC '97 Soundport Codec



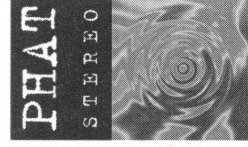
### AD1819

#### AC '97 FEATURES

- Fully Compliant AC '97 Analog I/O Component
- 48-Terminal TQFP Package
- Multibit SD Converter Architecture for Improved S/N Ratio >90 dB
- 16-Bit Stereo Full-Duplex Codec
- Four Analog Line-Level Stereo Inputs for Connection from LINE, CD, VIDEO and AUX
- Two Analog Line-Level Mono Inputs for Speakerphone and PC BEEP
- Mono MIC Input Switchable from Two External Sources
- High Quality CD Input with Ground Sense
- Stereo Line Level Output
- Mono Output for Speakerphone
- Power Management Support

#### ENHANCED FEATURES

- Support for Multiple Codec Communications
- DSP 16-Bit Serial Port Format
- Variable 7 kHz to 48 kHz Sampling Rate with 1 Hz Resolution
- Supports Modem Sample Rates and Filtering
- Phat Stereo 3D Stereo Enhancement

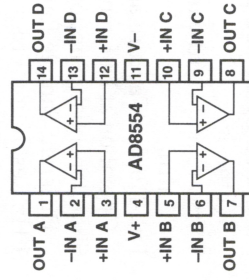
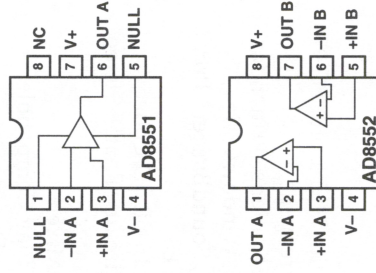


► Faxcode 2127



## Precision: Low Offset and Drift

### Zero Drift, Single Supply, Rail-to-Rail Input/Output Operational Amplifier



### AD8551/AD8552/AD8554

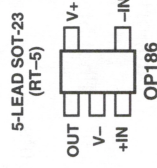
#### FEATURES

- Low Offset Voltage:  $5\ \mu\text{V}$
- Input Offset Drift:  $0.03\ \mu\text{V}/^\circ\text{C}$
- Rail-to-Rail Input and Output Swing
- 5 V Single-Supply Operation
- High Gain, CMRR, PSRR: 120 dB
- Ultralow Input Bias Current: 20 pA
- Low Supply Current:  $650\ \mu\text{A}/\text{Op Amp}$
- Overload Recovery Time: 2 ms
- No External Components Required

Faxcode 2206

## Low Power

### Rail-to-Rail Output Operational Amplifier



### OP186

#### FEATURES

- Low Supply Current:  $5\ \mu\text{A max}$
- Single-Supply Operation: 2.7 V to 12 V
- Wide Bandwidth: 160 kHz
- Wide Input Voltage Range
- Rail-to-Rail Output Swing
- No Phase Reversal

#### APPLICATIONS

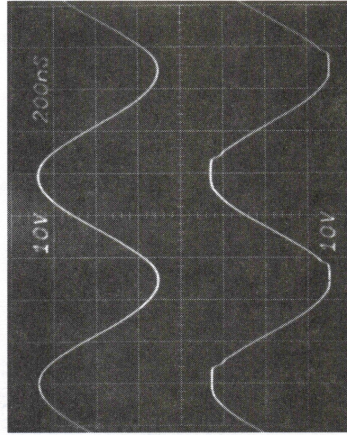
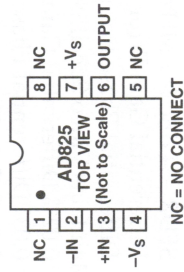
- Portable Phones
- Comparator
- Battery Powered Instrumentation
- Safety Monitoring
- Remote Sensors
- Low Voltage Strain Gage Amplifiers

Faxcode 2096



## Low Bias Current

### Low Cost, General Purpose High Speed JFET Amplifier



Performance with Rail-to-Rail Input Signals

#### AD825

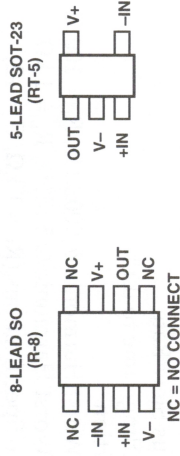
##### FEATURES

- High Speed
- 41 MHz, -3 dB Bandwidth
- 125 V/ $\mu$ s Slew Rate
- 80 ns Settling Time
- Input Bias Current of 20 pA and Noise Current of 10 fA/ $\sqrt{\text{Hz}}$
- Input Voltage Noise of 12 nV/ $\sqrt{\text{Hz}}$
- Fully Specified Power Supplies:  $\pm 5$  V to  $\pm 15$  V
- Low Distortion: -76 dB at 1 MHz
- High Output Drive Capability
- Drives Unlimited Capacitance Load
- 50 mA Min Output Current
- No Phase Reversal When Input Is at Rail
- Available in 8-Lead SOIC

► Faxcode 2403

## Rail-to-Rail Output

### 15 MHz Rail-to-Rail Operational Amplifier



#### AD8519

##### FEATURES

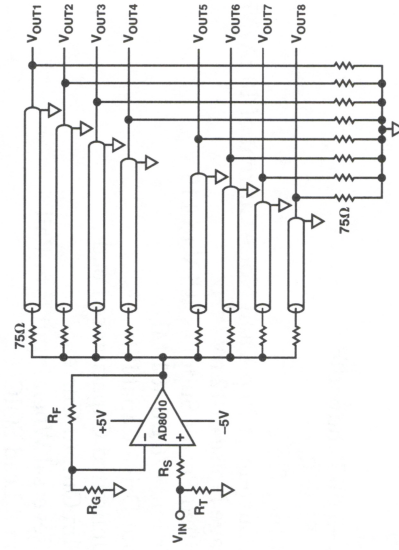
- SOT-23 Package Saves Space
- Wide Bandwidth: 15 MHz @ 5 V
- Low Offset Voltage: 1.2 mV max
- Rail-to-Rail Output Swing
- 4 V/ $\mu$ s Slew Rate
- Unity-Gain Stable
- Single-Supply Operation: +3 V to +12 V

► Faxcode 2439



## High Speed Current Feedback

### 200 mA Output Current 230 MHz, High Speed Amplifier



Video Distribution Amplifier

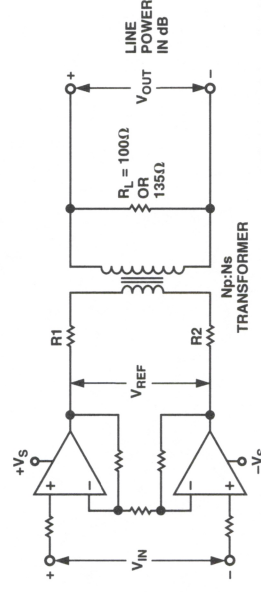
#### AD8010

##### FEATURES

- 200 mA of Output Current
- 9  $\Omega$  Load
- SFDR -54 dBc @ 1 MHz
- Differential Gain Error 0.04%,  $f = 4.43$  MHz
- Differential Phase Error 0.06°,  $f = 4.43$  MHz
- Maintains Video Specifications Driving Eight Parallel 75  $\Omega$  Loads
- 0.02% Differential Gain
- 0.03° Differential Phase
- 0.1 dB Gain Flatness to 60 MHz
- THD -72 dBc @ 1 MHz,  $R_L = 18.75 \Omega$
- IP3 42 dBm @ 5 MHz,  $R_L = 18.75 \Omega$
- 1 dB Gain Compression 21 dBm @ 5 MHz,  $R_L = 100 \Omega$
- 230 MHz -3 dB Bandwidth,  $G = +1$ ,  $R_L = 18.75 \Omega$
- 800 V/ $\mu$ s Slew Rate,  $R_L = 18.75 \Omega$
- 25 ns Settling Time to 0.1%
- Available in 8-Lead DIP, 16-Lead Wide Body SOIC and Thermally Enhanced 8-Lead SOIC

☐ Faxcode 2193

### Dual 350 MHz Low Power Amplifier



Differential Circuit for xDSL Applications

#### AD8012

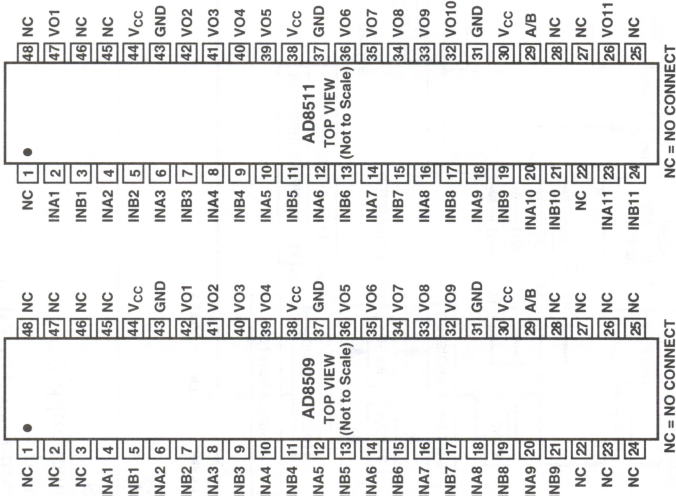
##### FEATURES

- Low Power
- 1.7 mA/Amplifier Supply Current
- Fully Specified for  $\pm 5$  V and +5 V Supplies
- High Output Current, 125 mA
- High Speed
- 350 MHz, -3 dB Bandwidth ( $G = +1$ )
- 150 MHz, -3 dB Bandwidth ( $G = +2$ )
- 2,250 V/ $\mu$ s Slew Rate
- 20 ns Settling Time to 0.1%
- Low Distortion
- 72 dBc Worst Harmonic @ 500 kHz,  $R_L = 100 \Omega$
- 66 dBc Worst Harmonic @ 5 MHz,  $R_L = 1 \text{ k}\Omega$
- Good Video Specifications ( $R_L = 1 \text{ k}\Omega$ ,  $G = +2$ )
- 0.02% Differential Gain Error
- 0.06° Differential Phase Error
- Gain Flatness 0.1 dB to 40 MHz
- 60 ns Overdrive Recovery
- Low Offset Voltage, 1.5 mV
- Low Voltage Noise, 2.5 nV/ $\sqrt{\text{Hz}}$
- Available in 8-Lead SOIC, and 8-Lead microSOIC

☐ Faxcode 2054



9- and 11-Channel, Muxed Input  
LCD Reference Drivers



AD8509/AD8511

FEATURES

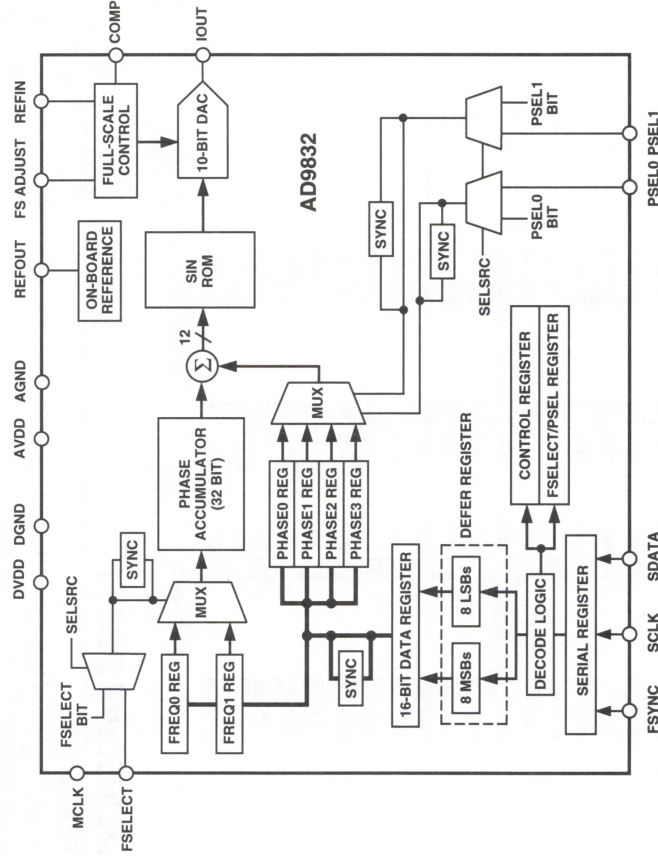
- Single-Supply Operation: 3.3 V to 5 V
- High Output Current: 300 mA
- Low Supply Current: 6 mA
- Stable with 1000 pF Loads
- Pin Compatible with LMC6009
- Pin Compatible with CL-FP6131

☐ Faxcode 2204



## Direct Digital Synthesis

### CMOS Complete DDS



### AD9832

#### FEATURES

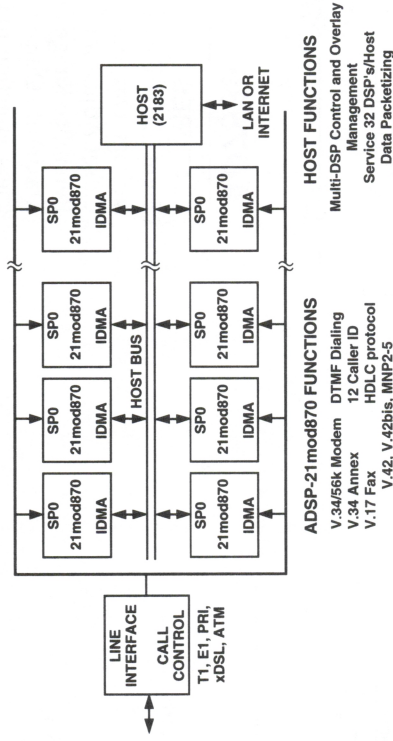
- 3 V/5 V Power Supply
- 25 MHz Speed
- On-Chip SINE Look-Up Table
- On-Chip 10-Bit DAC
- Serial Loading
- Power-Down Option
- 45 mW Power Consumption
- 16-Lead TSSOP

☐ Faxcode 2210



## Modems

### Digital Modem Processor



ADSP-21mod870 Network Access System

### ADSP-21mod870

#### FEATURES

##### PERFORMANCE

- 25 ns Instruction Cycle Time @ 3.3 V, 40 MIPS Sustained Performance
- Single-Cycle Instruction Execution
- Single-Cycle Context Switch
- 3-Bus Architecture Allows Dual Operand Fetches in Every Instruction Cycle
- Multifunction Instructions
- Power-Down Mode Featuring Low CMOS Standby Power Dissipation with 400 Cycle Recovery from Power-Down Condition
- Low Power Dissipation in Idle Mode

##### INTEGRATION

- ADSP-2100 Family Code Comptaible, with Instruction Set Extensions
- 160K Bytes of On-Chip RAM, Configured as 32K Words On-Chip Program Memory RAM and 32K Words On-Chip Data Memory RAM
- Dual Purpose Program Memory for Both Instruction and Data Storage
- Independent ALU, Multiplier/Accumulator, & Barrel Shifter Computational Units
- Two Independent Data Address Generators
- Powerful Program Sequencer Provides Zero Overhead Looping Conditional Instruction Execution
- Programmable 16-Bit Interval Timer with Prescaler
- 100-Lead TQFP

#### SYSTEM INTERFACE

- 16-Bit Internal DMA Port for High Speed Access to On-Chip Memory (Mode Selectable)
- 4 MByte Memory Interface for Storage of Data Tables & Program Overlays (Mode Selectable)
- 8-Bit DMA to Byte Memory for Transparent Program and Data Memory Transfers (Mode Selectable)
- I/O Memory Interface with 2048 Locations Supports Parallel Peripherals (Mode Selectable)
- Programmable Memory Strobe & Separate I/O Memory Space Permits "Glueless" System Design
- Programmable Wait State Generation
- Two Double-Buffered Serial Ports with Companding Hardware and Automatic Data Buffering
- Automatic Booting of On-Chip Program Memory from Byte-Wide External Memory, e.g., EPROM, or Through Internal DMA Port
- Six External Interrupts
- 13 Programmable Flag Pins Provide Flexible System Signaling
- UART Emulation through Software SPORT Reconfiguration
- ICE-PORT™ Emulator Interface Supports Debugging in Final Systems

ICE-PORT is a trademark of Analog Devices, Inc.

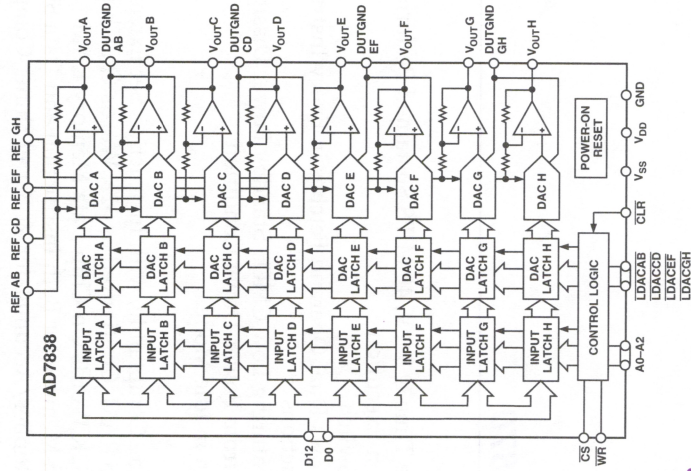
☐ Faxcode 2408



# D/A CONVERTERS

## Bipolar without On-Chip Reference

### Octal, 13-Bit Voltage-Output DAC with Parallel Interface

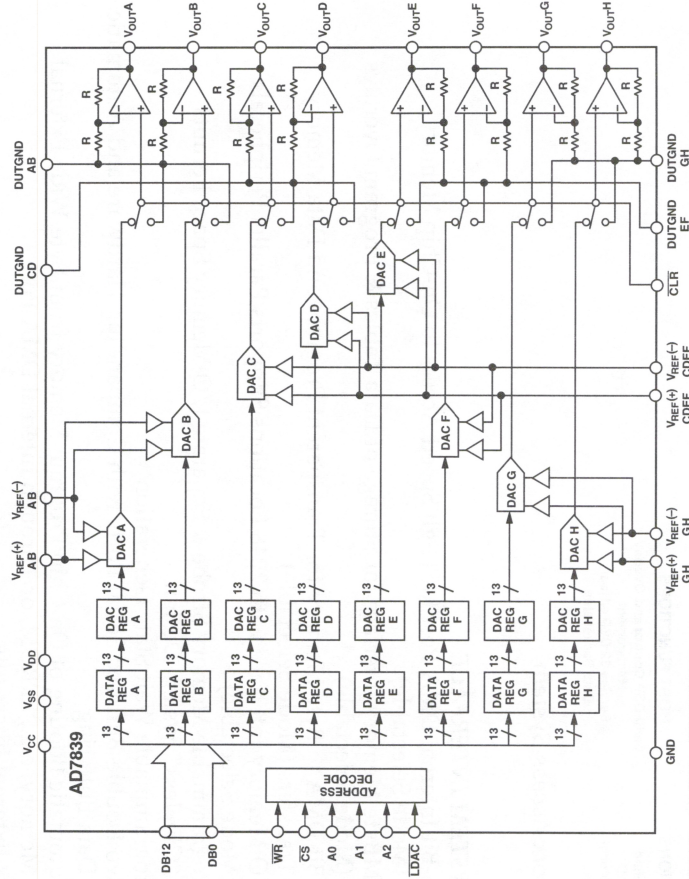


#### AD7838

##### FEATURES

- Eight 13-Bit DACs in One Package
- Full 13-Bit Performance without Adjustments
- Buffered Voltage Outputs
- Offset Adjust for Each DAC Pair
- $\pm 5$  V Supply Operation
- Unipolar or Bipolar Output Swing to  $\pm 4.5$  V
- Output Settling to 1/2 LSB in 5  $\mu$ s
- Double Buffered Digital Inputs
- Microprocessor and TTL/CMOS Compatible
- Asynchronous Load Facility Using LDAC Inputs
- Clear Function to User-Defined Voltage
- Power-On-Reset, Outputs Power Up at DUTGND
- 44-Lead PLCC Package, Pin Compatible with MAX547

☐ Faxcode 2248



#### AD7839

##### FEATURES

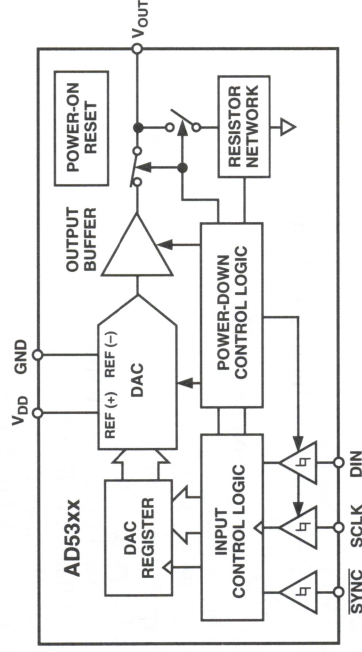
- Eight 13-Bit DACs in One Package
- Voltage Outputs
- Offset Adjust for Each DAC Pair
- Reference Range of  $\pm 5$  V
- Maximum Output Voltage Range of  $\pm 10$  V
- Clear Function to User-Defined Voltage
- 44-Terminal PQFP Package

☐ Faxcode 2249



## True Single Supply

**+2.7 V to +5.5 V, 140  $\mu$ A, Rail-to-Rail  
Voltage Output 8-/10-/12-Bit DACs**



### **AD5300 (8-Bit), AD5310 (10-Bit), AD5320 (12-Bit)**

#### **FEATURES**

- Single 8-/10-/12-Bit DACs
- 6-Lead SOT-23 and 8-Lead microSOIC Packages
- Micropower Operation: 140  $\mu$ A @ 5 V
- Power-Down to 200 nA @ 5 V, 50 nA @ 3 V
- +2.7 V to +5.5 V Power Supply
- Guaranteed Monotonic by Design
- Reference Derived from Power Supply
- Power-On-Reset to Zero Volts
- Three Power-Down Functions
- Low Power Serial Interface with Schmitt-Triggered Inputs
- On-Chip Output Buffer Amplifier, Rail-to-Rail Operation
- SYNC Interrupt Facility

▶ Faxcode 2173 (AD5300)

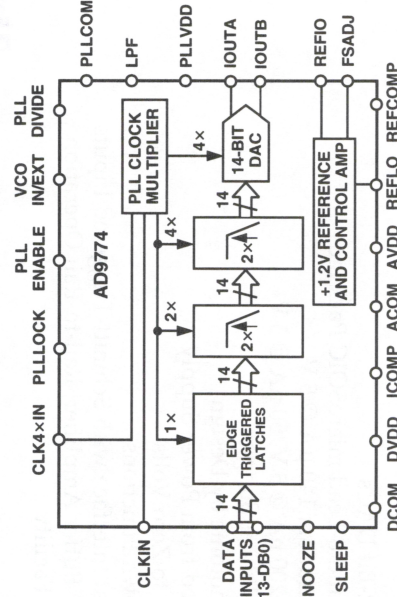
▶ Faxcode 2197 (AD5310)

▶ Faxcode 2405 (AD5320)



## High Speed TxDACs

### 14-Bit, 32 MSPS TxDAC+ with 4× Interpolation Filters



### AD9774

#### FEATURES

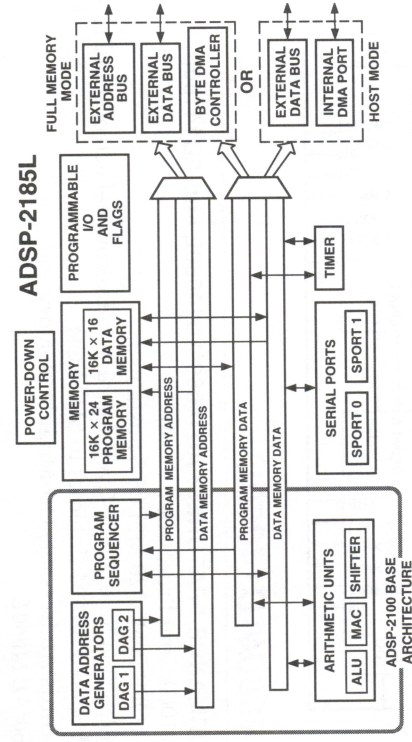
- Single 3 V or 5 V Supply
- 14-Bit DAC Resolution and Input Data Width
- 32 MSPS Input Data Rate at 5 V
- 13.5 MHz Reconstruction Bandwidth
- 12 ENOBS @ 1 MHz
- 77 dBc SFDR @ 5 MHz
- 4× Interpolation Filter
- 69 dB Image Rejection
- 84% Passband to Nyquist Ratio
- 0.002 dB Passband Ripple
- 23 3/4 Cycle Latency
- Internal 4× Clock Multiplier
- On-Chip 1.20 V Reference
- 44-Lead MQFP Package

☐ Faxcode 2168



## Fixed-Point

### DSP Microcomputers



### ADSP-2185L, ADSP-2186L

#### FEATURES

##### PERFORMANCE

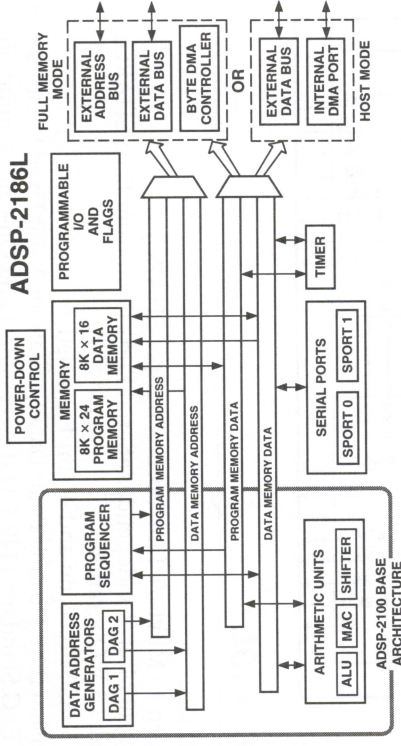
- 30 ns Instruction Cycle Time 33 MIPS Sustained Performance
- Single-Cycle Instruction Execution
- Single-Cycle Context Switch
- 3-Bus Architecture Allows Dual Operand Fetches in Every Instruction Cycle
- Multifunction Instructions
- Power-Down Mode Featuring Low CMOS Standby Power Dissipation with 400 Cycle Recovery from Power-Down Condition
- Low Power Dissipation in Idle Mode

##### INTEGRATION

- ADSP-2100 Family Code Compatible, with Instruction Set Extensions
- ADSP-2185L 80K Bytes of On-Chip RAM, Configured as 16K Words On-Chip Program Memory RAM and 16K Words On-Chip Data Memory RAM

##### ADSP-2186L

- 40K Bytes of On-Chip RAM, Configured as 8K Words On-Chip Program Memory RAM and 8K Words On-Chip Data Memory RAM
- Dual Purpose Program Memory for Both Instruction and Data Storage
- Independent ALU, Multiplier/Accumulator and Barrel Shifter Computational Units
- Two Independent Data Address Generators



Powerful Program Sequencer Provides Zero Overhead Looping Conditional Instruction Execution

Programmable 16-Bit Interval Timer with Prescaler

100-Lead TQFP

#### SYSTEM INTERFACE

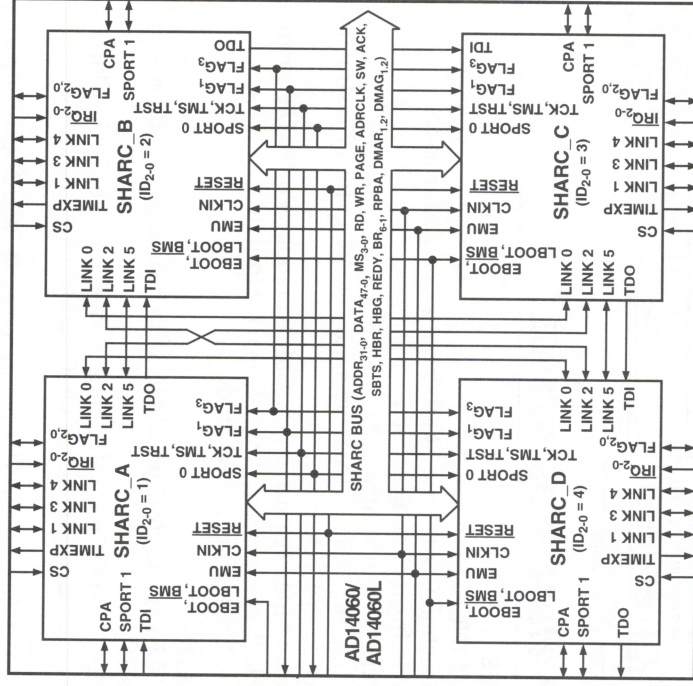
- 16-Bit Internal DMA Port for High Speed Access to On-Chip Memory (Mode Selectable)
- 4 MByte Byte Memory Interface for Storage of Data Tables and Program Overlays
- 8-Bit DMA to Byte Memory for Transparent Program and Data Memory Transfers (Mode Selectable)
- I/O Memory Interface with 2048 Locations Supports Parallel Peripherals (Mode Selectable)
- Programmable Memory Strobe and Separate I/O Memory Space Permits "Glueless" System Design (Mode Selectable)
- Programmable Wait State Generation
- Two Double-Buffered Serial Ports with Companding Hardware and Automatic Data Buffering
- Automatic Booting of On-Chip Program Memory from Byte-Wide External Memory, e.g., EPROM, or Through Internal DMA Port
- Six External Interrupts
- 13 Programmable Flag Pins Provide Flexible System Signaling
- UART Emulation through Software SPORT Reconfiguration
- ICE-Port Emulator Interface Supports Debugging in Final Systems

- ▶ Faxcode 2073 (ADSP-2185L)
- ▶ Faxcode 2074 (ADSP-2186L)



## Floating-Point

### Quad-SHARC DSP Multiprocessor Family

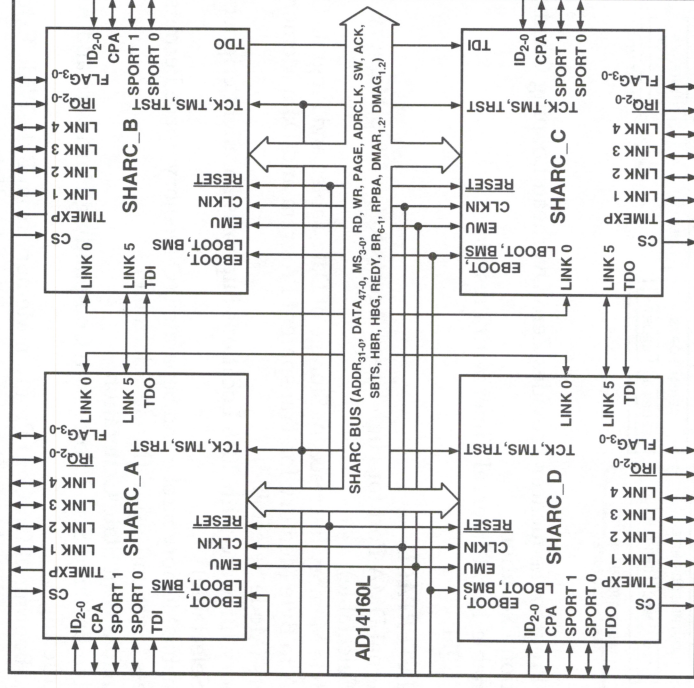


#### AD14060/AD14060L

##### PERFORMANCE FEATURES: AD14060/AD14060L and AD14160L

- ADSP-21060 Core Processor (x4)
- 480 MFLOPS Peak, 320 MFLOPS Sustained
- 25 ns Instruction Rate, Single-Cycle Instruction Execution—Each of Four Processors
- 16 Mbit Shared SRAM (Internal to SHARCs)
- 4 Gigawords Addressable Off-Module Memory

- AD14060/AD14060L
  - Twelve 40 Mbyte/s Link Ports (Three per SHARC)
  - Four 40 Mbit/s Independent Serial Ports (One from Each SHARC)
  - One 40 Mbit/s Common Serial Port



#### AD14160L

##### AD14160L

- Sixteen 40 Mbyte/s Link Ports (Four per SHARC)
- Eight 40 Mbit/s Independent Serial Ports (Two from Each SHARC)
- 5 V and 3.3 V Operation
- 32-Bit Single Precision and 40-Bit Extended Precision IEEE Floating Point Data Formats, or 32-Bit Fixed Point Data Format
- IEEE JTAG Standard 1149.1 Test Access Port and On-Chip Emulation

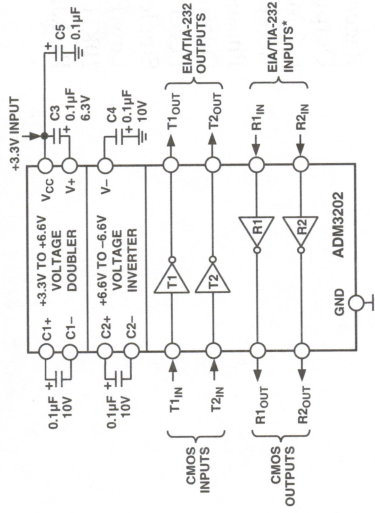
##### PACKAGING FEATURES: AD14060/AD14060L and AD14160L

- AD14060/AD14060L – 308-Lead Ceramic Quad Flatpack (CQFP)
- AD14160L – 452-Lead Ceramic Ball Grid Array (CBGA)

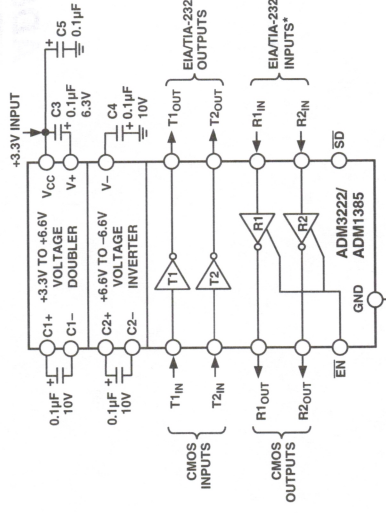
- ☐ Faxcode 2132 (AD14060/AD14060L)
- ☐ Faxcode 2453 (AD14160L)



## Low Power, 3 V, RS-232 Line Drivers/Receivers



NOTE  
\*INTERNAL 5k $\Omega$  PULL-DOWN RESISTOR ON EACH RS-232 INPUT



NOTE  
\*INTERNAL 5k $\Omega$  PULL-DOWN RESISTOR ON EACH RS-232 INPUT

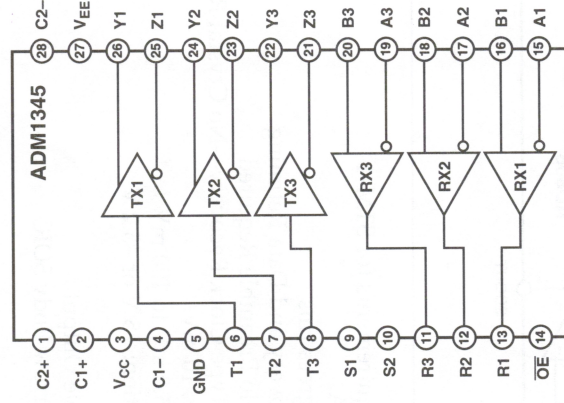
## ADM3202/ADM3222/ADM1385

### FEATURES

- 230 kbits/s Data Rate Guaranteed
- Low Power Shutdown (ADM3222E and ADM1385)
- DIP, SO, SOIC and TSSOP Package Options
- Upgrade for MAX3222/32 and LTC1385

► Faxcode 1991 (ADM3202)  
► Faxcode 2146 (ADM3222, ADM1385)

## Single Supply V.35 Transceiver



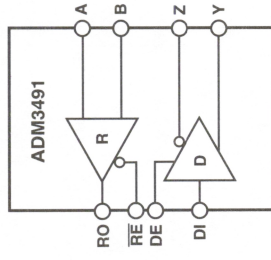
## ADM1345

### FEATURES

- Provides All V.35 Differential Clock and Data Signals on One Chip
- Single +5 V Supply
- Shutdown Mode 1  $\mu$ A Typical  $I_{CC}$
- Pin-Selectable DCE or DTE Configuration
- ESD-Protected Transmitter Outputs and Receiver Inputs Up to 10 kV
- Failsafe Transmitter Outputs Are High Impedance when Disabled, Shutdown or Power Off
- Short-Circuit Protected Transmitter Outputs
- Complies with CCITT V.35 Specification
- Flow-Through Pinout for Easy PCB Layout
- Second Source for LTC1345

► Faxcode 2183

## 3.3 V, Full-Duplex, 840 $\mu$ A EIA RS-485 Transceiver



## ADM3491

### FEATURES

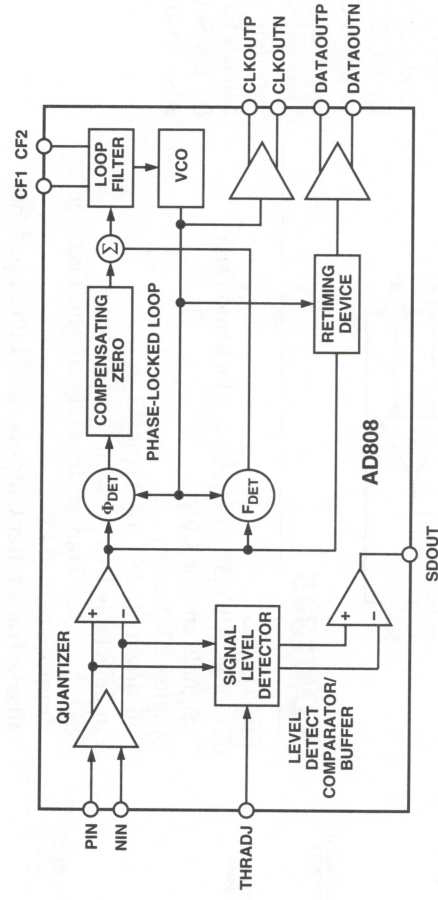
- Operates with +3.3 V Supply
- Meets EIA RS-422 and RS-485 Standards
- 12 k $\Omega$  Input Impedance
- Up to 32 Transceivers on Bus
- 10 Mbps Data Rate
- Short Circuit Protection
- Thermal Shutdown
- Excellent Noise Immunity
- 840  $\mu$ A Supply Current
- 0.1  $\mu$ A Shutdown Current
- Also Available in TSSOP Package

► Faxcode 2424



## High Speed Networks

### 622 Mbps Quantizer, Clock Recovery and Data Retiming PLL



#### AD808

##### FEATURES

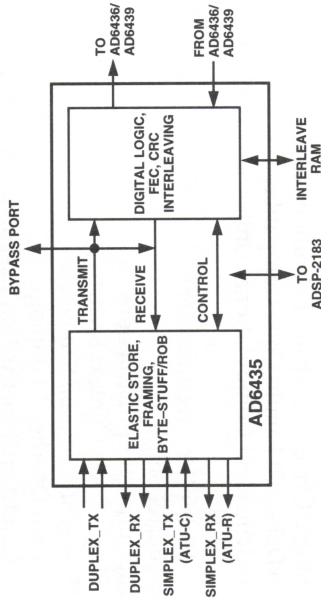
- Meets ITH G.958 Requirements for STM-4 Regenerator—Type A
- Output Jitter: 2.0 Degrees rms
- 622 Mbps Clock Recovery and Data Retiming
- Accepts NRZ Data, No Preamble Required
- Phase-Locked Loop Type Clock Recovery—No Crystal Required
- Quantizer Sensitivity: 10 mV
- Level Detect Range: 5.0 mV to 100 mV
- Single Supply Operation: +5 V or -5.2 V
- Low Power: 300 mW
- 10KH ECL Compatible Output
- Package: 16-Lead Narrow Body SOIC

☐ Faxcode 2414



## ADSL Chipset

### Digital Interface and Control IC



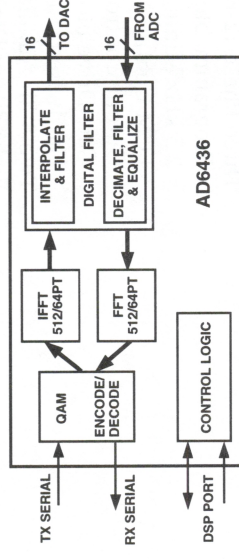
## AD6435

### FEATURES

Component in Analog Devices' DMT ADSL Chipset—AD20msp910  
Designed to ANSI/ETSI T1.413  
Suitable for CO or Residence (ATU-R and ATU-C)  
Performs All Digital Interface Tasks:  
Elastic Store; Byte-Stuffing/Robbing  
Synchronization and EOC and AOC Insertion/Removal  
CRC Generation/Detection  
Scrambler and Descrambler  
Forward Error Correction/Detection  
Interleave/Deinterleave  
Absolute Maximum Data Rate: 12 Mbps  
Simplex/4 Mbps Duplex  
Simple Interface: Synchronous Simplex and Duplex Streams  
128-Lead TQFP  
Operating Temperature Range: -40°C to +85°C  
3.3 V Operation, 400 mW

■ Faxcode 2305

### DMT Coprocessor



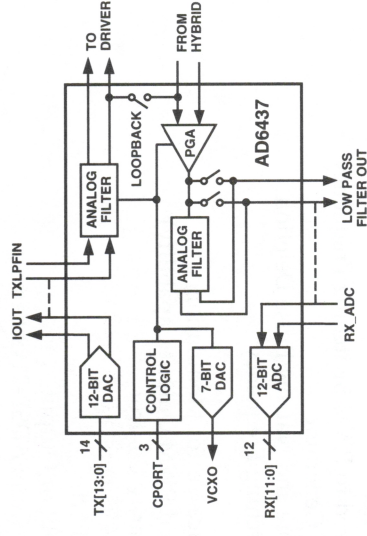
## AD6436

### FEATURES

Component in Analog Devices DMT ADSL Chipset—AD20msp910  
Designed to ANSI/ETSI T1.413 (Cat 1 FDM)  
Suitable for CO or Residence (ATU-R and ATU-C)  
Performs All DMT Functions and Operations:  
QAM Encoding and Decoding Operations  
Tone Reordering and Scaling  
FFT for Receive (512/64 Point at RT/CO)  
Inverse FFT on Transmission (512/64 Point)  
Frequency and Time Domain Equalization (FDQ and TDQ)  
Digital Filters (Interpolation and Decimation)  
128-Lead TQFP  
-40°C to +85°C  
3.3 V Operation, 600 mW

■ Faxcode 2306

### Analog Front End



## AD6437

### FEATURES

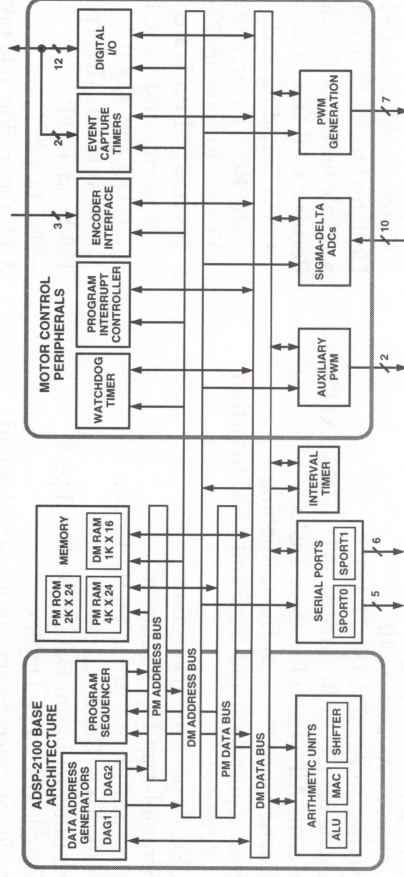
Complete Analog Front End for ADSL Modems  
Part of ADI ADSL Chipset (AD20msp910)  
Designed to ANSI T1.413/ETSI TR238/ITU G.adsl Performance  
e.g., 6.1 Mbps Downstream Over 12K Ft.  
Suitable for CO or Residence (ATU-C and ATU-R)  
Includes Transmit and Receive Signal Paths:  
DAC: 20 MSPS 12-Bit Current Output  
ADC: 10 MSPS 12-Bit  
PGA: 0 dB-25 dB of Gain with 1 dB Steps  
Programmable Filters  
Auxiliary DAC for Timing Recovery  
Interface to 3.3 V or 5 V Digital Logic  
Low Power Consumption (485 mW)  
80-Lead PQFP  
-40°C to +85°C Operation

■ Faxcode 2307



## Single Supply

### High Performance DSP-Based Servo Motor Controller



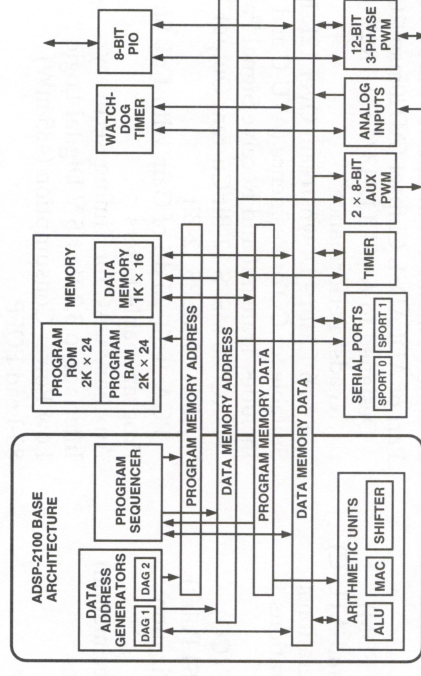
## ADMC300

### FEATURES

- 25 MIPS Fixed-Point DSP Core
- Single Cycle Instruction Execution (40 ns)
- ADSP-2100 Family Code Compatible
- Independent Computational Units
  - ALU
  - Multiplier / Accumulator
  - Barrel Shifter
- Multifunction Instructions
- Single Cycle Context Switch
- Powerful Program Sequencer
- Zero Overhead Looping
- Conditional Instruction Execution
- Two Independent Data Address Generators
- Memory Configuration
  - 4K x 24-Bit Program Memory RAM
  - 2K x 24-Bit Program Memory ROM
  - 1K x 16-Bit Data Memory RAM

► Faxcode 2253

### Single Chip DSP Motor Controller



## ADMC330

### FEATURES

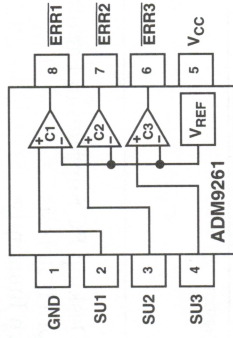
- Seven Analog Input Channels
  - Acquisition Synchronized to PWM Switching Frequency
- Three-Phase 12-Bit PWM Generator
  - Programmable Deadtime and Narrow Pulse Deletion
- 2.5 kHz Minimum Switching Frequency
- ECM Control Mode
- Output Control for Space Vector Modulation
- Gate Drive Block (Pulsed PWM Output Capability)
- Hardwired Output Polarity Control
- Two 8-Bit Auxiliary PWM Timers
- Eight Bits of Digital I/O Port
- Bit Configurable as Input or Output
- 20 MIPS Fixed Point DSP Core; ADSP-21xx Family
- Two Synchronous Serial Ports
  - Memory Configuration
    - 2K x 24-Bit Word Program RAM
    - 1K x 16-Bit Word Data RAM
    - 2K x 24-Bit Word Program ROM

► Faxcode 2126



## Hardware Monitors

### Triple-Power Supply Monitor



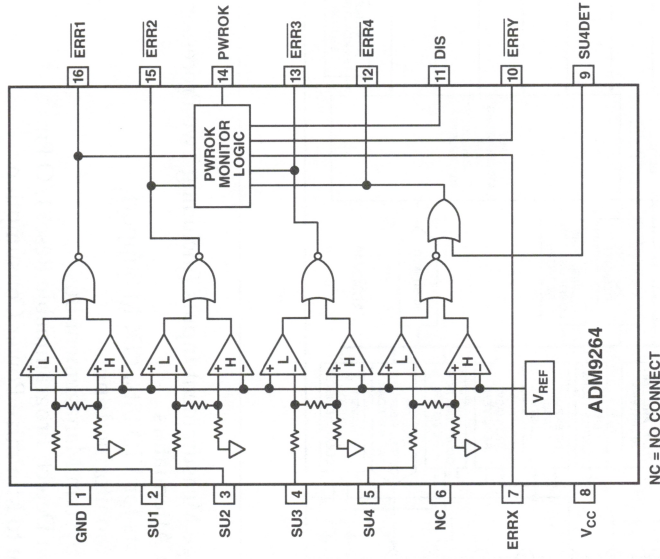
#### ADM9261

##### FEATURES

- Simultaneous Monitoring of 9 V and Two 3.3 V Supplies
- Low Power: 10  $\mu$ A Typical
- Internal Comparator Hysteresis
- Power Supply Glitch Immunity
- $V_{CC}$  from 2.5 V to 3.6 V
- Guaranteed from  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$
- No External Components
- 8-Lead microSOIC Package

▶ Faxcode 2207

### Quad Power Supply Monitor for Desktop PCs



#### ADM9264

##### FEATURES

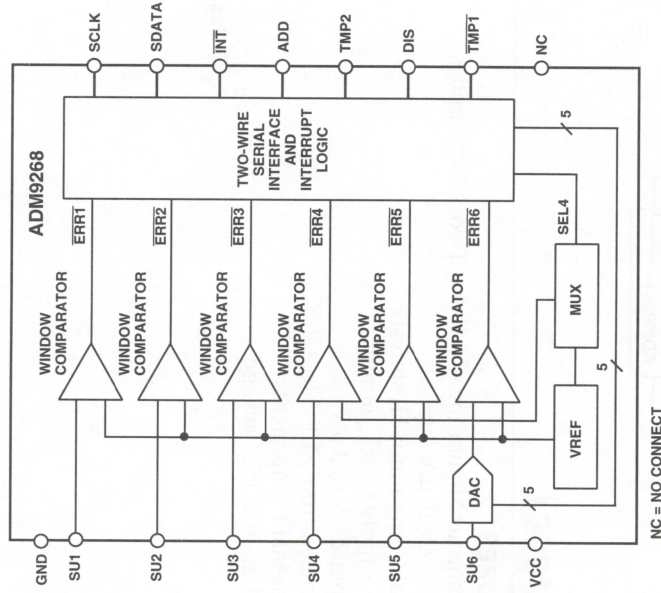
- Monitoring of 12 V, 5 V, 3.3 V and 2.8 V Supplies in Parallel
- Auxiliary Sensor Inputs
- Low Power: 25  $\mu$ A Typical
- Internal Comparator Hysteresis
- Power Supply Glitch Immunity
- $V_{CC}$  from 2.5 V to 6 V
- Guaranteed from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- No External Components
- 16-Pin Narrow SOIC Package (150 Mil Wide)

▶ Faxcode 2158



## Hardware Monitors

### Hex Power Supply Monitor with I<sup>2</sup>C Interface



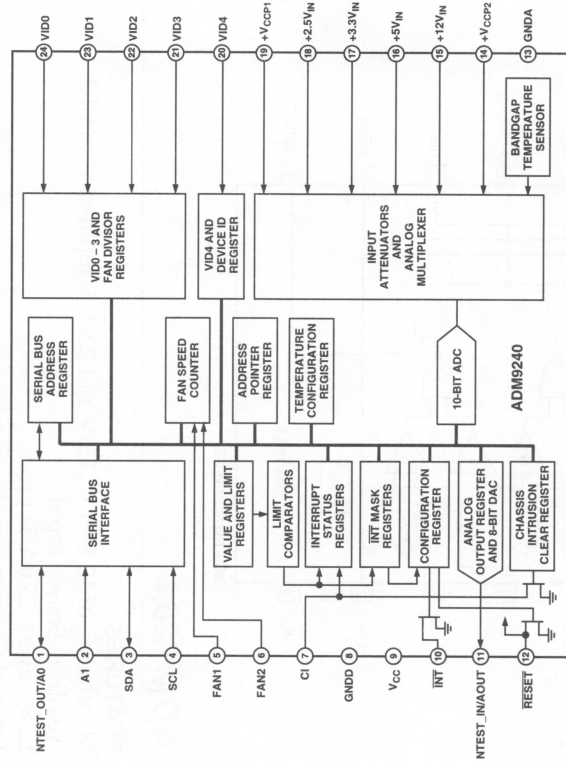
#### ADM9268

##### FEATURES

- Monitoring of All Desktop PC Supplies in Parallel
- Internal Comparator Hysteresis
- Power Supply Glitch Immunity
- Supports Klamath CPU Core Supply Voltage Options
- Two-Wire I<sup>2</sup>C Compatible Serial Interface
- V<sub>CC</sub> from 2.5 V to 6 V
- Guaranteed Operation from -40°C to +85°C
- No External Components
- 16-Lead Narrow (150 Mil) SOIC Package

► Faxcode 2483

### Low Cost Microprocessor System Hardware Monitor



#### ADM9240

##### FEATURES

- Six Direct Voltage Measurement Inputs (Including Two Processor Core Voltages) with On-Chip Attenuators
- Five Digital Inputs for VID Bits, LDCM Support
- Two Fan Speed Monitoring Inputs
- I<sup>2</sup>C Compatible System Management Bus
- Chassis Intrusion Detect, Programmable Reset I/O Pin
- Shutdown Mode to Minimize Power Consumption
- On-Chip Temperature Sensor
- Limit Comparison of All Monitored Values

##### APPLICATIONS

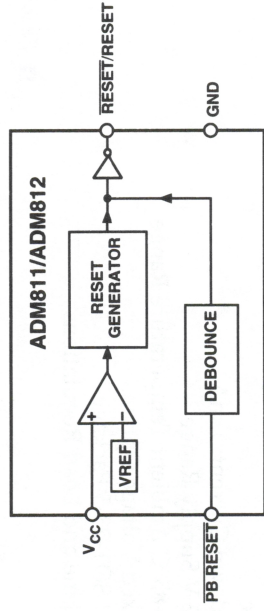
- Network Servers and Personal Computers
- Microprocessor-Based Office Equipment
- Test Equipment and Measuring Instruments

► Faxcode 2442



## Reset Generators with Manual Input

### Microprocessors Supervisory Circuit in 4-Lead SOT-143



#### ADM811/ADM812

##### FEATURES

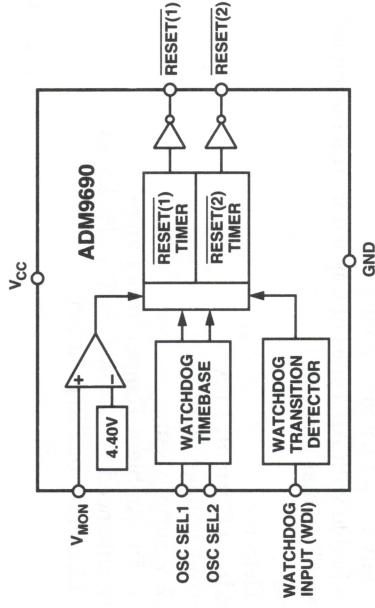
- Superior Upgrade for MAX811/MAX812
- Specified Over Temperature
- Low Power Consumption (6  $\mu$ A typ)
- Precision Voltage Monitor: +3 V, +3.3 V, +5 V Options
- Reset Assertion Down to 1 V  $V_{CC}$
- 140 ms Min Power-On Reset
- Logic Low  $\overline{\text{RESET}}$  Output (ADM811)
- Logic High RESET Output (ADM812)
- Built-In Manual Reset

##### APPLICATIONS

- Microprocessor Systems
- Controllers
- Intelligent Instruments
- Automotive Systems
- Safety Systems
- Portable Instruments

☐ Faxcode 2180

## Power Supply and Watchdog Timer Monitoring Circuit



#### ADM9690

##### FEATURES

- Precision Voltage Monitor (4.40 V)
- Watchdog Timeout Monitor
- Selectable Watchdog Timeout—0.75 ms, 1.5 ms, 12.5 ms, 25 ms
- Two RESET Outputs

##### APPLICATIONS

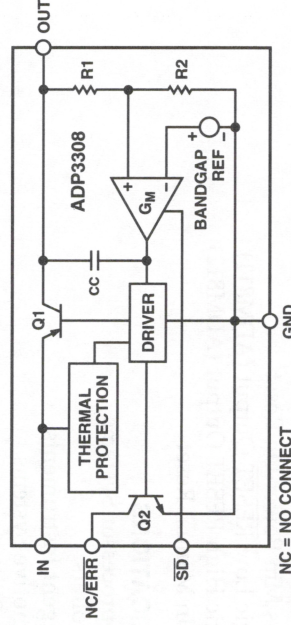
- Microprocessor Systems
- Computers
- Printers
- Controllers
- Intelligent Instruments

☐ Faxcode 2189



## DC-to-DC Converters: Linear Low Dropout Regulators

High Accuracy anyCAP  
50 mA Low Dropout Linear Reg



## ADP3308

## FEATURES

## Accuracy Over Line and Load Regulations

(@ 25°C):  $\pm 1.2\%$

Ultralow Dropout Voltage: 160 mV Typical @ 100 mA

Requires Only  $C_O = 0.47 \mu\text{F}$  for Stability

anyCAP = Stable with All Types of Capacitors (Including MLCC)

## Current and Thermal Limiting

## Low Noise

Low Shutdown Current: 1 mA

3.0 V to 12 V Supply Range

-20°C to +85°C Ambient Temperature Range

## Several Fixed Voltage Options

## Ultrasmall SOT-23-5 Package

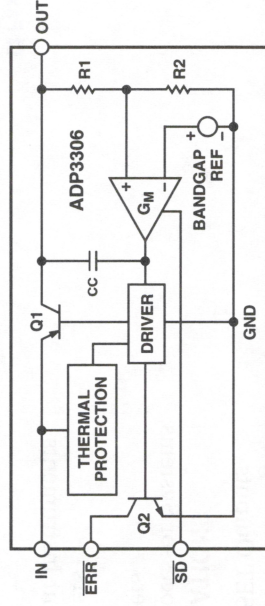
## Excellent Line and Load Regulations

## Excellent Line and Load Regulations



Faxcode 2423

## High Accuracy anyCAP 300 mA Low Dropout Linear Regulator



## ADP3306

## FEATURES

High Accuracy Over Line and Load Regulations at 25°C:  $\pm 1\%$ 

Ultralow Dropout Voltage: 300 mV Typical @ 300 mA

### Requires Only $C_0 = 1\ \mu\text{F}$ for Stability

anyCAP = Stable with All Types of Capacitors (Including MLCC)

## Current and Thermal Limiting

## Low Noise

## Dropout Detector

Low Shutdown Current: 1  $\mu$ A

## Several Fixed Voltage Options

3.2 V to 12 V Supply Range

-20°C to +85°C Ambient Temperature Range

Thermally Enhanced SO-8 and TSSOP-14 Packages

## Excellent Line and Load Regulations

## Excellent Line and Load Regulations

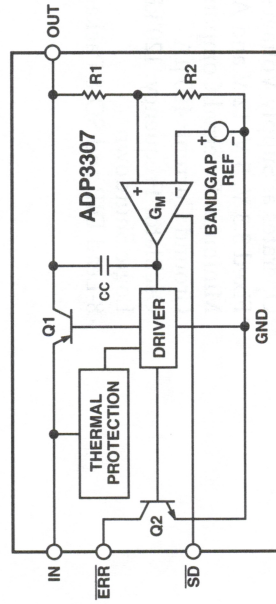


Faxcode 2236

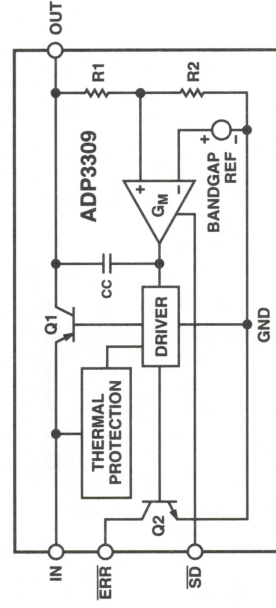


## DC-to-DC Converters: Linear Low Dropout Regulators

### High Accuracy anyCAP 100 mA Low Dropout Linear Regulator



**ADP3307**



**ADP3309**

#### FEATURES

- 0.8% Accuracy Over Line and Load Regulations @ +25°C
- Ultralow Dropout Voltage: 120 mV Typical @ 100 mA
- Requires only  $C_O = 0.47 \mu\text{F}$  for Stability
- anyCAP = Stable with All Types of Output Capacitors (Including MLCC)
- Current and Thermal Limiting
- Low Noise
- Dropout Detector
- Low Shutdown Current:  $1 \mu\text{A}$
- 3.0 V to 12 V Supply Range
- 20°C to +85°C Ambient Temperature Range
- Several Fixed Voltage Options
- Ultrasmall SOT-23-6 Lead Package (ADP3307)
- Ultrasmall SOT-23-5 Lead Package (ADP3309)
- Excellent Line and Load Regulations

☒ Faxcode 2300 (ADP3307)

☒ Faxcode 2423 (ADP3309)

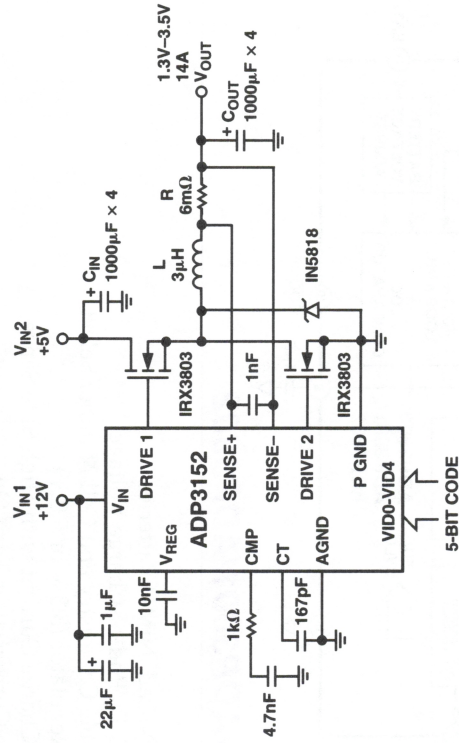






## DC-to-DC Converters: Switching Regulators

### Programmable Synchronous Switching Regulator Controller



#### ADP3152

##### FEATURES

- 5-Bit Digitally Programmable 1.3 V to 3.5 V Output Voltage
- Dual N-Channel Synchronous Driver
- Initial Output Accuracy  $\pm 1.5\%$
- High Efficiency: Over 95% Possible
- Current Mode Operation
- Short Circuit Protection
- 16-Lead SOIC Package

##### APPLICATIONS

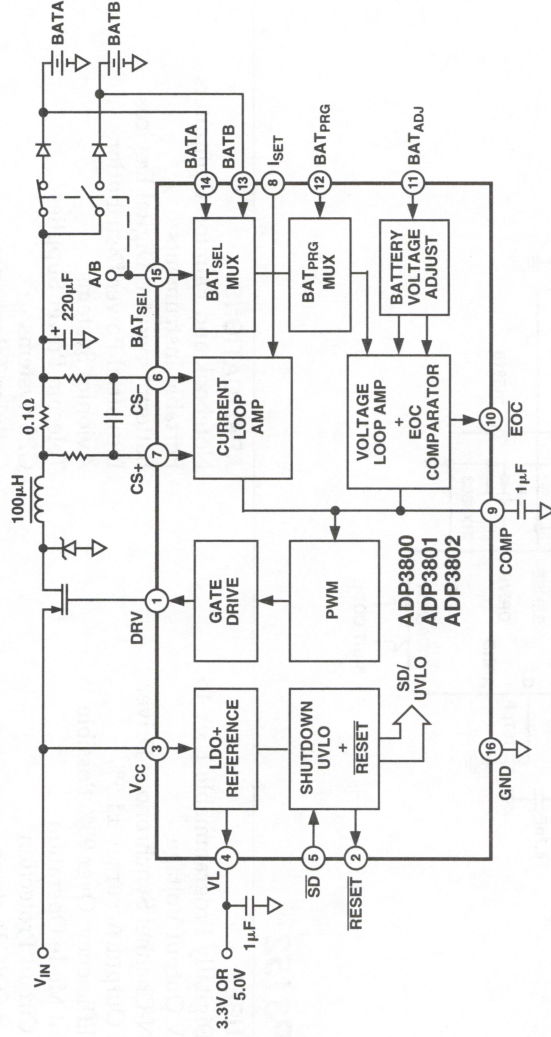
- Notebook and Palmtop Computers
- Portable Instruments
- Battery Operated Digital Devices
- Industrial Power Distribution
- Avionics Systems
- Telecom Power Supplies
- GPS Systems
- Cellular Telephones

► Faxcode 2422



## Battery Chargers

### Switch Mode Dual Chargers and LDO Regulator for Lilon, NiCad, and NiMH Batteries



### ADP3800/ADP3801/ADP3802

#### FEATURES

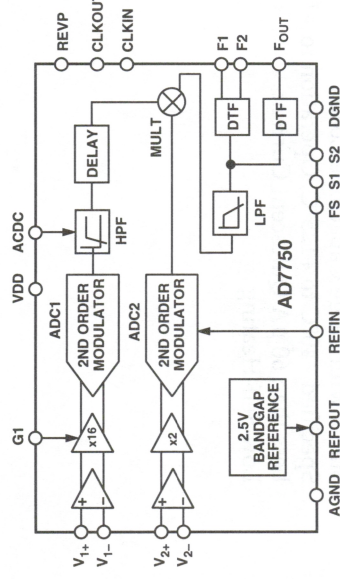
- Charges Lilon, NiCad, NiMH Batteries
- Guaranteed  $\pm 0.75\%$  End-of-Charge Voltage
- Pin Programmable Chemistry and Cell Number Select
- On-Chip LDO Regulator (3.3 V or 5.0 V)
- Programmable Charge Current with High Side Sense
- Softstart Charge Current after Turn-On
- Undervoltage Lock-Out
- Drives External PMOS (3801/3802)
- Drives External PNP (3800)
- $\pm 10\%$  Adjustable End-of-Charge Voltage
- Intelligent End-of Charge Output Signal
- PWM Oscillator Frequency

☐ Faxcode 2200



## Power Meters

### Product-to-Frequency Converters

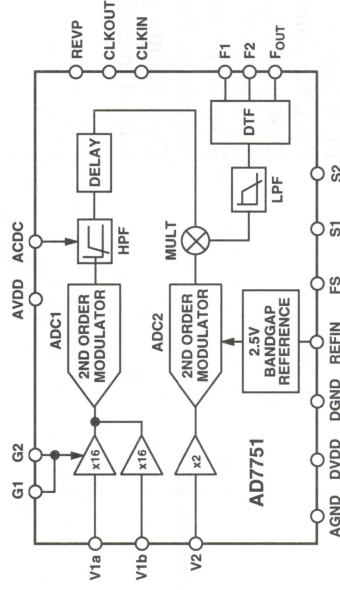


#### AD7750

##### FEATURES

- Two Differential Analog Input Channels
- Product of Two Channels
- Voltage-to-Frequency Conversion on a Single Channel
- Real Power Measurement Capability
- < 0.2% Error Over the Range 400% Ibasic to 2%
- Ibasic
- Two or Four Quadrant Operation (Positive and Negative Power)
- Gain Select of 1 or 16 on the Current Channel (Channel 1)
- Choice of On-Chip or External Reference
- Choice of Output Pulse Frequencies Available (Pins F1 and F2)
- High Frequency Pulse Output for Calibration Purposes ( $F_{OUT}$ )
- HPF on Current Channel for Offset Removal
- Single 5 V Supply and Low Power

▶ Faxcode 2090

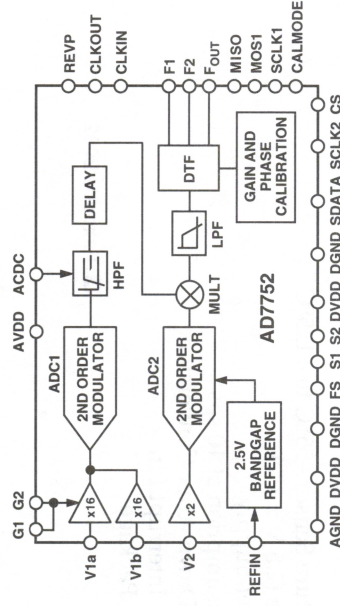


#### AD7751

##### FEATURES

- Two Analog Input Channels
- Product Functions:
  - Product of Two Channels
  - Voltage-to-Frequency Conversion
- Instantaneous Real Power Output
- < 0.3% Error Over the Range 400% Ibasic to 2%
- Ibasic
- Antialiasing Robustness (Dual Current Channel)
- Gain Select of 1 or 16 on the Current Channel
- On-Chip or External Reference Voltage
- Choice of Output Pulse Frequencies (Pins F1 and F2)
- High Frequency Pulse Output for Calibration Purposes ( $F_{OUT}$ )
- HPF on Current Channel for Offset Removal
- Single 5 V Supply and Low Power

▶ Faxcode 2432



#### AD7752

##### FEATURES

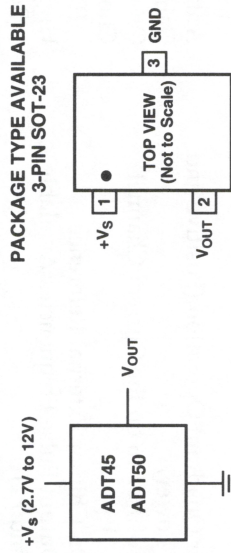
- Two Analog Input Channels
- Product Functions:
  - Product of Two Channels
  - Voltage-to-Frequency Conversion
- Instantaneous Real Power Output
- < 0.3% Error Over the Range 400% Ibasic to 2%
- Ibasic
- Antialiasing Robustness (Dual Current Channel)
- Current Channel Gain Selection
- On-Chip or External Reference Voltage
- Selectable Output Frequencies (Pins F1 and F2)
- High Frequency Calibration Output Pulse ( $F_{OUT}$ )
- High Pass Filter (HPF) on Channel One for Input Offset Removal
- Digital Phase and Gain Calibration Coefficients Stored in Off-Chip Nonvolatile Memory
- SPI (Serial Port Interface)
- Single 5 V Supply and Low Power

▶ Faxcode 2433



## Temperature Sensors

### Low Voltage SOT-23 Temperature Sensors



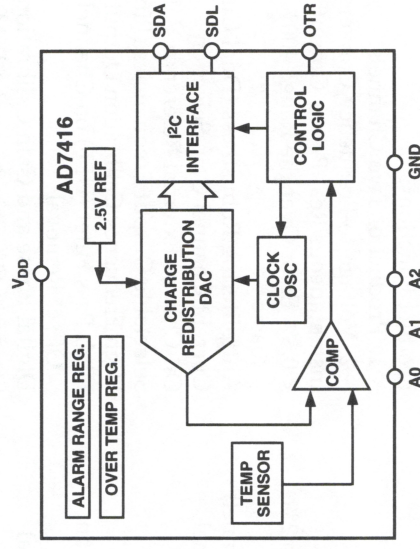
#### ADT45/ADT50

##### FEATURES

- Low Voltage Operation (2.7 V to 12 V)
- Calibrated Directly in  $^{\circ}\text{C}$
- 10 mV/ $^{\circ}\text{C}$  Scale Factor
- $\pm 2^{\circ}\text{C}$  Accuracy Over Temperature (typ)
- $\pm 0.5^{\circ}\text{C}$  Linearity (typ)
- Stable with Large Capacitive Loads
- Specified  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ , Operation to  $+150^{\circ}\text{C}$
- Less than 60  $\mu\text{A}$  Quiescent Current
- Low Self-Heating

► Faxcode 2258

### I<sup>2</sup>C® 10-Bit ADC with On-Chip Temperature Sensor



#### AD7416

##### FEATURES

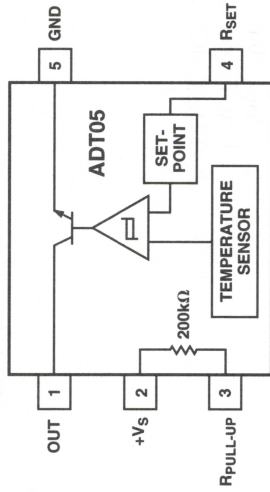
- 10-Bit ADC with 20  $\mu\text{s}$  Conversion Time
- I<sup>2</sup>C Interface
- On-Chip Temperature Sensor  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- On-Chip Reference (2.5 V  $\pm 1\%$ )
- 2.7 V to 5.5 V Power Supply
- 3.5  $\mu\text{W}$  Power Consumption at 10 sps
- Automatic Power Down After Conversion
- Over Temperature Interrupt Pin
- 8-Lead microSOIC Package

► Faxcode 2092



## Temperature Controllers

### Low Voltage, Resistor Programmable Thermostatic Switch



#### ADT05

##### FEATURES

- User-Programmable Temperature Setpoint
- 2.0°C Setpoint Accuracy
- 4.0°C Preset Hysteresis
- Wide Supply Range (+2.7 V dc to +7.0 V dc)
- Wide Temperature Range (−40°C to +150°C)
- Low Power Dissipation (230  $\mu$ W @ 3.3 V)

##### APPLICATIONS

- Industrial Process Control
- Thermal Control Systems
- CPU Monitoring (i.e., Pentium®)
- Computer Thermal Management Circuits
- Fan Control
- Handheld/Portable Electronic Equipment

▶ Faxcode 2121

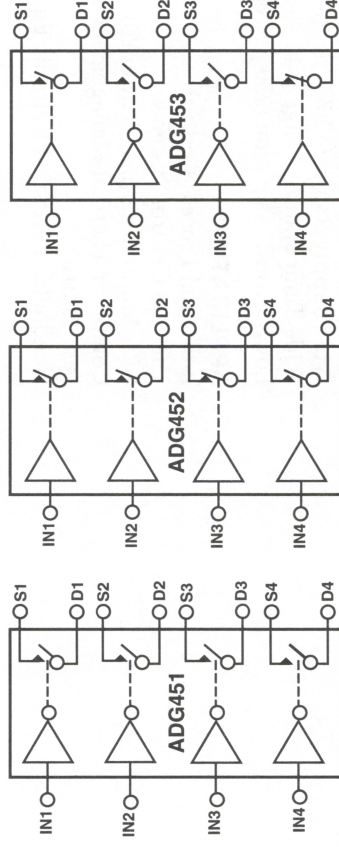
Pentium is a registered trademark of Intel Corporation.



## CMOS

### LC<sup>2</sup>MOS

#### 5 $\Omega$ Quad SPST Switches



SWITCHES SHOWN FOR A LOGIC "1" INPUT

#### ADG451/ADG452/ADG453

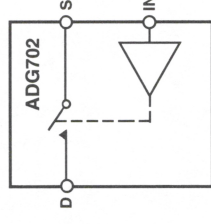
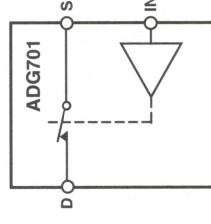
##### FEATURES

- Low On Resistance (4  $\Omega$ )
- On Resistance Flatness 0.2  $\Omega$
- 44 V Supply Maximum Ratings
- $\pm 15$  V Analog Signal Range
- Fully Specified @  $\pm 5$  V,  $+12$  V,  $\pm 15$  V
- Ultralow Power Dissipation (18  $\mu$ W)
- ESD 2 kV
- Continuous Current 100 mA
- Fast Switching Times
  - $t_{ON}$  70 ns
  - $t_{OFF}$  60 ns
- TTL/CMOS Compatible
- Pin Compatible Upgrade for ADG411/ADG412/ADG413 and ADG431/ADG432/ADG433

Faxcode 2196

### CMOS

#### 2 V/3 V/5 V Low $R_{ON}$ Precision Switches



#### ADG701/ADG702

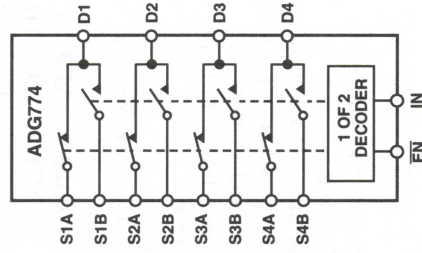
##### FEATURES

- +2.0 V to +5.5 V Single Supplies
- 1  $\Omega$  On Resistance
- Low On-Resistance Flatness
- 6-Lead  $\mu$ SOIC Package
- Fast Switching Times
  - $t_{ON}$  20 ns
  - $t_{OFF}$  10 ns
- Low Power Consumption (1  $\mu$ W)
- TTL/CMOS Compatible



## Video

### CMOS 3 V/5 V, Wide Bandwidth Quad 2:1 Mux



#### ADG774

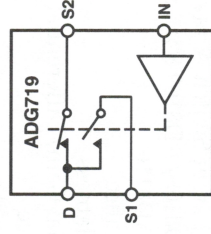
##### FEATURES

- Low Insertion Loss and On-Resistance:  $6\ \Omega$  typical
- On-Resistance Flatness  $< 2\ \Omega$
- Single 3.3 V/5 V Supply Operation
- Rail-to-Rail Operation
- Very Low Distortion: 2%
- Low Quiescent Supply Current (100 nA typ)
- Fast Switching Times
  - $t_{ON}$  100 ns
  - $t_{OFF}$  90 ns
- Pin Compatible with PI5L200

##### APPLICATIONS

- 10/100 Base-TX/T4
- 100 VG-AnyLAN
- Token Ring 4/16 Mbps
- ATM25
- NIC Adapter and Hubs
- SONET OC1 51.8 Mbps
- T1/E1

### CMOS 3 V/5 V, Low $R_{ON}$ SPDT Switch



#### ADG719

##### FEATURES

- +2.7 V to +3.6 V and +5 V  $\pm 10\%$  Supplies
- $2\ \Omega$  On-Resistance
- Bandwidth: 100 MHz
- 6-Lead SOT-23, 8-Lead microSOIC Package
- Fast Switching Times
  - $t_{ON}$  20 ns
  - $t_{OFF}$  10 ns
- Low Power Consumption
- TTL/CMOS Compatible

##### APPLICATIONS

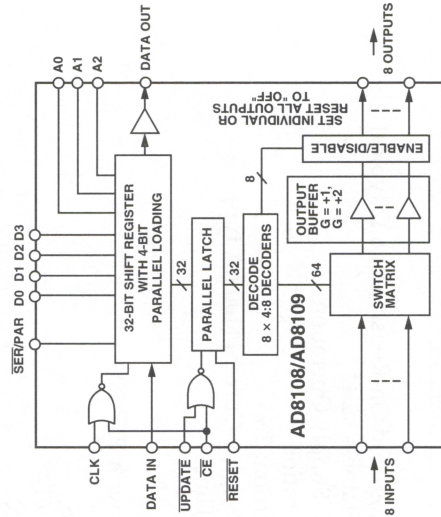
- Battery Powered Systems
- Communication Systems
- Sample Hold Systems
- Audio Signal Routing



# SWITCHES

## Video Crosspoint

### 325 MHz, 8 × 8 Buffered Video Crosspoint Switches



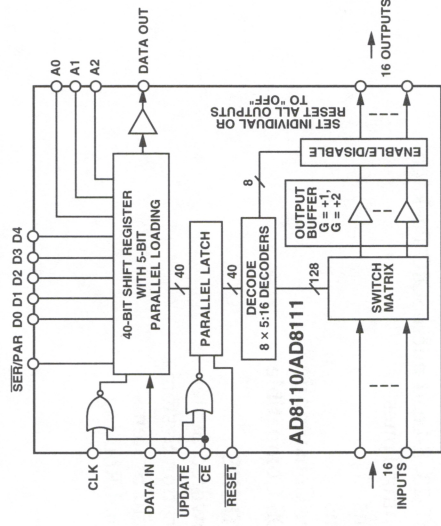
#### AD8108/AD8109

##### FEATURES

- 8 × 8 High Speed Nonblocking Switch Arrays
- AD8108: G = +1; AD8109: +2
- Serial or Parallel Programming of Switch Array
- Serial Data Out Allows "Daisy Chaining" of Multiple 8 × 8s to Create Larger Switch Arrays
- Output Disable Allows Connection of Multiple Devices
- Excellent Video Performance
- 60 MHz 0.1 dB Gain Flatness
- 0.02%/0.02° Differential Gain/Differential Phase Error ( $R_L = 150 \Omega$ )
- Excellent AC Performance
- AD8108 AD8109
- 3 dB Bandwidth 325 MHz 250 MHz
- Slew Rate 400 V/μs 480 V/μs
- Low Power of 45 mW
- Low All Hostile Crosstalk of -83 dB @ 5 MHz
- 80-Lead TQFP Package (12 mm × 12 mm)

► Faxcode 2191

### 260 MHz, 16 × 8 Buffered Video Crosspoint Switches



#### AD8110/AD8111

##### FEATURES

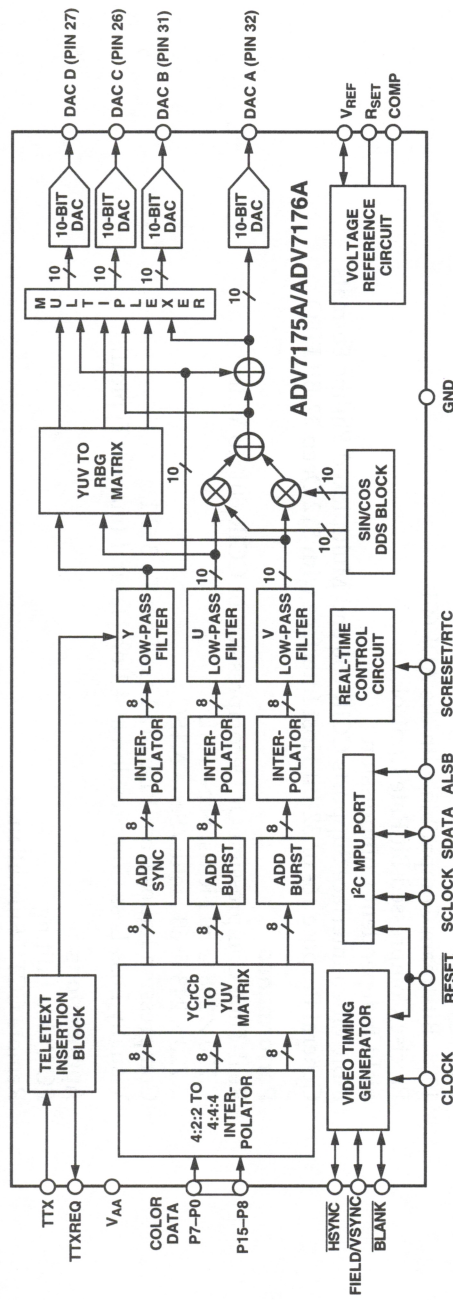
- 16 × 8 High Speed Nonblocking Switch Arrays
- AD8110: G = +1; AD8111: +2
- Serial or Parallel Switch Array Control
- Serial Data Out Allows "Daisy Chaining" of Multiple Crosspoints to Create Larger Switch Arrays
- Pin Compatible with AD8108/AD8109 8 × 8 Switch Arrays
- For a 16 × 16 Array See AD8116
- Excellent Video Performance
- 60 MHz 0.1 dB Gain Flatness
- 0.02%/0.02° Differential Gain/Differential Phase Error ( $R_L = 150 \Omega$ )
- Excellent AC Performance
- 260 MHz -3 dB Bandwidth
- 500 V/μs Slew Rate
- Low Power of 50 mW
- Low All Hostile Crosstalk of -78 dB @ 5 MHz
- Output Disable Allows Direct Connection of Multiple Device Outputs
- 80-Lead TQFP Package (12 mm × 12 mm)

► Faxcode 2436



## Video Encoder

### High Quality, 10-Bit, Digital CCIR-601 to PAL/NTSC Video Encoder



#### ADV7175A/ADV7176A

#### FEATURES

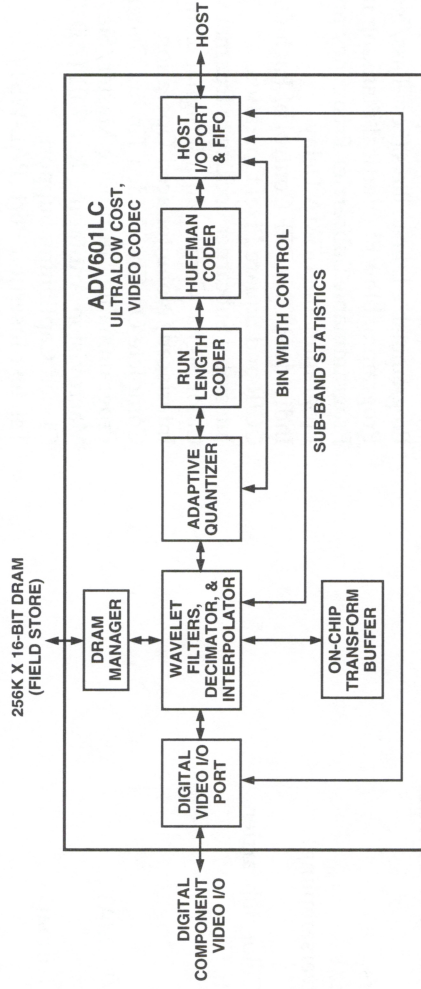
- ITU-R BT601/656 YCrCb to PAL/NTSC Video Encoder
- High Quality 10-Bit Video DACs
- Integral Nonlinearity <1 LSB at 10 Bits
- NTSC-M, PAL-M/N, PAL-B/D/G/H/I
- Single 27 MHz Clock Required (x2 Oversampling)
- 80 dB Video SNR
- 32-Bit Direct Digital Synthesizer for Color Subcarrier
- Multistandard Video Output Support:
  - Composite (CVBS)
  - Component S-Video (Y/C)
  - Component YUV and RGB
  - EuroSCART Output (RGB + CVBS/LUMA)
- Video Input Data Port Supports:
  - CCIR-656 4:2:2 8-Bit Parallel Input Format
  - 4:2:2 16-Bit Parallel Input Format
  - SMPTE 170M NTSC Compatible Composite Video
  - ITU-R BT.470 PAL Compatible Composite Video
  - Full Video Output Drive or Low Signal Drive Capability
  - 34.7 mA max into 37.5  $\Omega$  (Doubly-Terminated 75 $\Omega$ )
  - 5 mA min with External Buffers

#### Programmable Simultaneous Composite

- and S-Video Y/C or RGB (SCART)/YUV Video Outputs
- Programmable Luma Filters (Low-Pass/Notch/Extended)
- Programmable VBI (Vertical Blanking Interval)
- Programmable Subcarrier Frequency and Phase
- Programmable LUMA Delay
- Individual ON/OFF Control of Each DAC
- CCIR and Square Pixel Operation
- Integrated Subcarrier Locking to External Video Source
- Color Signal Control/Burst Signal Control
- Interlaced/Noninterlaced Operation
- Complete On-Chip Video Timing Generator
- Programmable Multimode Master/Slave Operation
- Macrovision Antitaping Rev 7.01 (ADV7175A Only)
- Closed Captioning Support
- Teletext Insertion Port (PAL-WST)
- Onboard Color Bar Generation
- Onboard Voltage Reference
- 2-Wire Serial MPU Interface (I<sup>2</sup>C Compatible)
- Single Supply +5 V or +3 V Operation
- Small 44-Lead PQFP Thermally Enhanced Package



### Ultralow Cost Video Codec



### ADV601LC

#### FEATURES

- 100% Bitstream Compatible with the ADV601
- Precise Compressed Bit Rate Control
- Field Independent Compression
- 8-Bit Video Interface Supports CCIR-656 and Multiplexed Philips Formats
- General Purpose 16- or 32-Bit Host Interface with 512 Deep 32-Bit FIFO

#### Performance

- Real-Time Compression Or Decompression of CCIR-601 to Video:
  - 720 × 288 @ 50 Fields/Sec—PAL
  - 720 × 243 @ 60 Fields/Sec—NTSC
- Compression Ratios from Visually Loss-Less To 350:1
- Visually Loss-Less Compression at 4:1 on Natural Images (Typical)

#### Applications

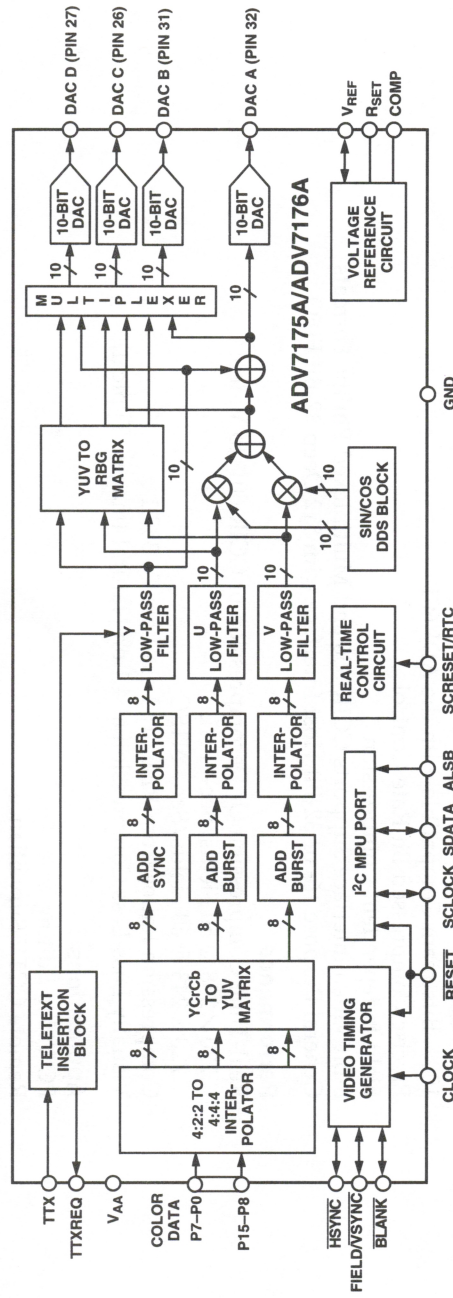
- PC Video Editing
- Remote CCTV Surveillance
- Digital Camcorders
- Digital Video Tape
- Wireless Video Systems
- TV Instant Replay

☐ Faxcode 2011



## Video Encoder

### High Quality, 10-Bit, Digital CCIR-601 to PAL/NTSC Video Encoder



#### ADV7175A/ADV7176A

#### FEATURES

- ITU-R BT601/656 YCrCb to PAL/NTSC Video Encoder
- High Quality 10-Bit Video DACs
- Integral Nonlinearity <1 LSB at 10 Bits
- NTSC-M, PAL-M/N, PAL-B/D/G/H/I
- Single 27 MHz Clock Required ( $\times 2$  Oversampling)
- 80 dB Video SNR
- 32-Bit Direct Digital Synthesizer for Color Subcarrier
- Multistandard Video Output Support:
  - Composite (CVBS)
  - Component S-Video (Y/C)
  - Component YUV and RGB
  - EuroSCART Output (RGB + CVBS/LUMA)
- Video Input Data Port Supports:
  - CCIR-656 4:2:2 8-Bit Parallel Input Format
  - 4:2:2 16-Bit Parallel Input Format
  - SMPTE 170M NTSC Compatible Composite Video
  - ITU-R BT.470 PAL Compatible Composite Video
- Full Video Output Drive or Low Signal Drive Capability
  - 34.7 mA max into 37.5  $\Omega$  (Doubly-Terminated 75 $\Omega$ )
  - 5 mA min with External Buffers

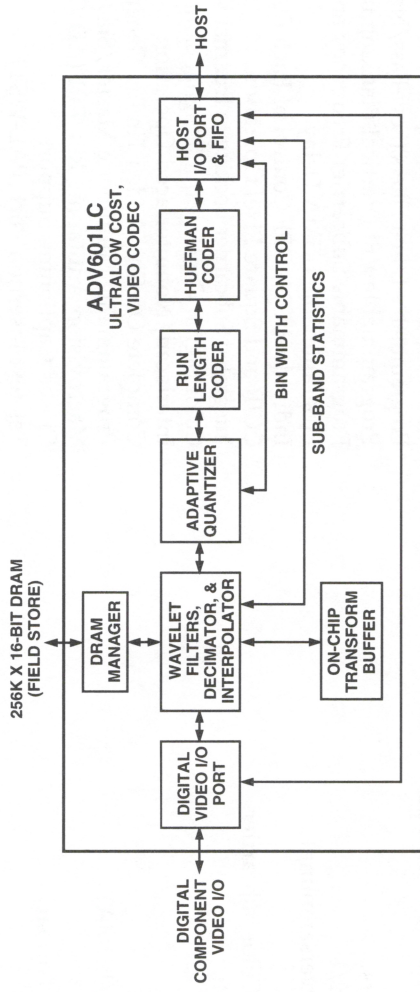
#### Programmable Simultaneous Composite

- and S-Video Y/C or RGB (SCART)/YUV Video Outputs
- Programmable Luma Filters (Low-Pass/Notch/Extended)
- Programmable VBI (Vertical Blanking Interval)
- Programmable Subcarrier Frequency and Phase
- Programmable LUMA Delay
- Individual ON/OFF Control of Each DAC
- CCIR and Square Pixel Operation
- Integrated Subcarrier Locking to External Video Source
- Color Signal Control/Burst Signal Control
- Interlaced/Noninterlaced Operation
- Complete On-Chip Video Timing Generator
- Programmable Multimode Master/Slave Operation
- Macrovision Antitaping Rev 7.01 (ADV7175A Only)
- Closed Captioning Support
- Teletext Insertion Port (PAL-WST)
- Onboard Color Bar Generation
- Onboard Voltage Reference
- 2-Wire Serial MPU Interface (I<sup>2</sup>C Compatible)
- Single Supply +5 V or +3 V Operation
- Small 44-Lead PQFP Thermally Enhanced Package



## Video Codec

### Ultralow Cost Video Codec



### ADV601LC

#### FEATURES

- 100% Bitstream Compatible with the ADV601
- Precise Compressed Bit Rate Control
- Field Independent Compression
- 8-Bit Video Interface Supports CCIR-656 and Multiplexed Philips Formats
- General Purpose 16- or 32-Bit Host Interface with 512 Deep 32-Bit FIFO

#### Performance

- Real-Time Compression Or Decompression of CCIR-601 to Video:
  - 720 × 288 @ 50 Fields/Sec—PAL
  - 720 × 243 @ 60 Fields/Sec—NTSC
- Compression Ratios from Visually Loss-Less To 350:1
- Visually Loss-Less Compression at 4:1 on Natural Images (Typical)

#### Applications

- PC Video Editing
- Remote CCTV Surveillance
- Digital Camcorders
- Digital Video Tape
- Wireless Video Systems
- TV Instant Replay

☐ Faxcode 2011



## CONTENTS

Ordering Guide .....	224
Package Options .....	226
Evaluation Boards .....	252
Product Families Still Available .....	259
Substitution Guide for Obsolete Products .....	260
Technical Publications .....	285
Worldwide Sales Directory .....	293
Product Index .....	298



# ORDERING GUIDE

## INTRODUCTION

This Ordering Guide will make it easy to order Analog Devices products. It will help you:

1. Find the correct part number for the options you want.
2. Get a price quotation and place an order with us, or one of our authorized distributors.
3. Know our warranty for components and subsystems.

For answers to further questions, call the nearest sales office (listed on pages 293 and 294).

## MODEL NUMBERING

In this reference manual many of the data sheets for products having a number of standard options contain an Ordering Guide. Use it to specify the correct part number for the exact combination of options you want. This manual contains

two model numbering schemes. The first is used for designating standard Analog Devices monolithic and hybrid products. The second is used by our Santa Clara division (formerly PMI) as designators for its product line.

Figure 1 shows the form of model number used for our proprietary standard monolithic ICs and many of our hybrids. It consists of an "AD" (Analog Devices) prefix, a 3-to-5-digit number,\* an alphabetic performance/temperature-range designator and a package designator. One or two additional letters may immediately follow the digits ("A" for second-generation redesigned ICs, "DI" for dielectrically isolated CMOS switches, e.g., AD536AJH, AD7512DIKD).

Figure 2 shows a different numbering scheme used by our Santa Clara division. This numbering scheme starts with a prefix that designates the device type and model number. It is then followed by a suffix consisting of alphabetic designators (as applicable) to indicate additional functional designations or options and packaging options.

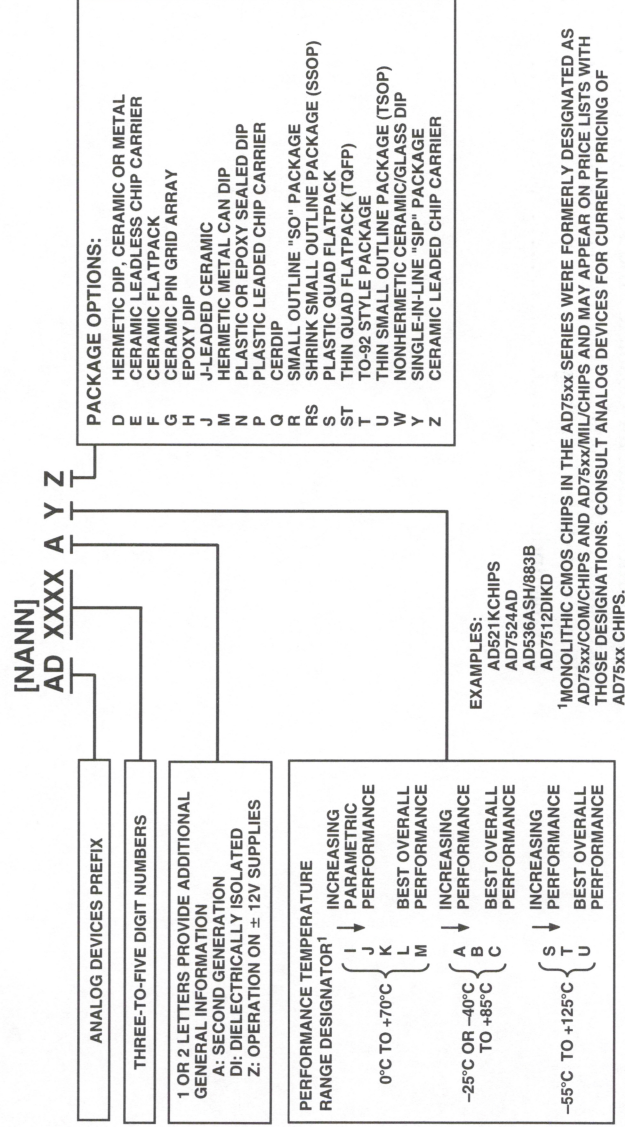


Figure 1. Model-Number Designations for Standard Analog Devices Monolithic and Hybrid IC Products. S, T and U Grades Have the Added Suffix /883B for Devices that Qualify to the Latest Revision of MIL-STD-883, Level B.

\*For some models, the combination [digit][letter] [two or three digits] is used instead of ADxxxx, e.g., 2580.



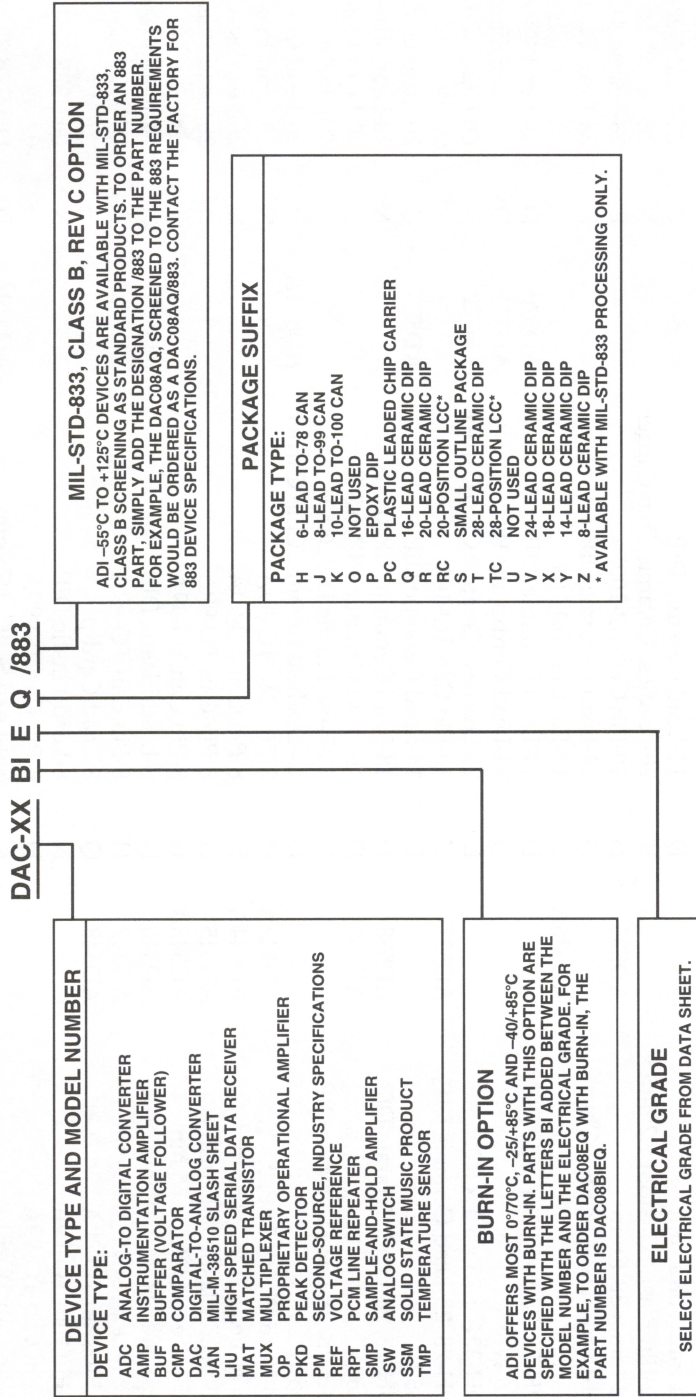


Figure 2. Santa Clara Division's Product Designations

## ORDERING FROM ANALOG DEVICES

When placing an order, please provide specific information regarding model type, number, option designations, quantity, ship-to and bill-to address. Prices quoted are list; they do not include applicable taxes, customs or shipping charges. All shipments are F.O.B. factory.

Eligible customers may place their orders through our regional customer service centers by dialing 1-781-461-3333 (New England only), 1-800-262-5645 (U.S.A. only), or through our representatives or authorized distributors. (The telephone numbers for our representatives or authorized distributors are listed on pages 293 and 294.) Analog Devices' minimum order value is \$1,000.00.

## WARRANTY AND REPAIR CHARGE POLICIES

All Analog Devices, Inc., products are warranted against defects in workmanship and materials under normal use and service for one year from the date of their shipment by Analog Devices, Inc., except that components obtained from others are warranted only to the extent of the original manufacturers' warranties,

if any, except for component test systems, which have a 180-day warranty. This warranty does not extend to any products that have been subjected to misuse, neglect, accident, or improper installation or application, or which have been repaired or altered by others. Analog Devices' sole liability and the Purchaser's sole remedy under this warranty is limited to repairing or replacing defective products. (The repair or replacement of defective products does not extend the warranty period. This warranty does not apply to components that are normally consumed in operation or that have a normal life inherently shorter than one year.) Analog Devices, Inc., shall not be liable for consequential damages under any circumstances.

**THE FOREGOING WARRANTY AND REMEDY ARE IN LIEU OF ALL OTHER REMEDIES AND ALL OTHER WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
AD102	Y	38-Pin Single In-Line Plastic Custom SIP	AD515	H	8-Pin Can TO-99A	AD557	N	16-Lead Plastic DIP, 0.3 W
AD104	Y	38-Pin Single In-Line Plastic Custom SIP	AD515A	H	8-Pin Can TO-99A		P	20-Lead Plastic Leaded Chip Carrier
AD202	N	38-Pin Plastic DIP Custom SIP	AD517	H	8-Pin Can TO-99A	AD558	D	16-Lead Ceramic DIP, 0.3 W
	Y	38-Pin Single In-Line Plastic Custom SIP	AD518	N	8-Lead Plastic DIP		N	16-Lead Plastic DIP, 0.3 W
AD203	N	38-Pin Plastic DIP Custom SIP	AD521	H	8-Pin Can TO-99A		E	20-Leadless Ceramic Chip Carrier
AD204	N	38-Pin Plastic DIP Custom SIP	AD522	D	14-Lead Ceramic DIP		P	20-Lead Plastic Leaded Chip Carrier
	Y	38-Pin Single In-Line Plastic Custom SIP	AD524	D	14-Lead Side Brazed			
AD208	Y	38-Pin Single In-Line Plastic Custom SIP		R	16-Lead Ceramic DIP, 0.3 W	AD561	D	16-Lead Ceramic DIP, 0.3 W
AD210	N	30-Pin Plastic DIP Custom DIP	AD526	E	20-Leadless Ceramic Chip Carrier		N	16-Lead Plastic DIP, 0.3 W
AD215	Y	44-Pin Custom SIP		D	16-Lead Ceramic DIP, 0.3 W	AD562	D	24-Lead Ceramic DIP, 0.6 W
AD246	Y	13-Pin Single In-Line Plastic Custom SIP	AD532	N	16-Lead Plastic DIP, 0.3 W	AD563	D	24-Lead Ceramic DIP, 0.6 W
				E	14-Lead Ceramic DIP	AD565A	D	24-Lead Ceramic DIP, 0.6 W
AD260	ND	22-Pin Plastic Custom 1.2 mm × 14 mm × 38.1 mm	AD533	H	20-Leadless Ceramic Chip Carrier		R	28 W-Lead SOIC, 2.65 mm
AD261	ND	22-Pin Plastic Custom 1.2 mm × 14 mm × 38.1 mm	AD534	H	10-Pin Can TO-100	AD566A	D	24-Lead Ceramic DIP, 0.6 W
AD280	P	44-Lead Plastic Leaded Chip Carrier		H	10-Pin Can TO-100	AD567	D	28-Lead Ceramic DIP, 0.6 W
AD390	D	DH-28, 28-Lead Ceramic DIP, 0.6 W	AD535	D	14-Lead Ceramic DIP	AD568	Q	24-Lead Cerdip, 0.3 W
AD392	D	DH-32A 1.75 × 1.1 × 0.225	AD536A	H	10-Pin Can TO-100		E	28-Leadless Ceramic Chip Carrier
AD394	D	DH-28, 28-Lead Ceramic DIP, 0.6 W		D	14-Lead Ceramic DIP	AD569	D	28-Lead Ceramic DIP, 0.6 W
AD395	D	DH-28, 28-Lead Ceramic DIP, 0.6 W		Q	14-Lead Cerdip, 0.3 W		N	28-Lead Plastic DIP, 0.6 W
AD396	D	DH-28, 28-Lead Ceramic DIP, 0.6 W	AD537	E	20-Leadless Ceramic Chip Carrier		E	28-Leadless Ceramic Chip Carrier
AD420	N	24-Lead Plastic DIP, 0.3 W		D	10-Pin Can TO-100		P	28-Lead Plastic Leaded Chip Carrier
AD421	R	24W-Lead SOIC, 2.65 mm	AD538	D	14-Lead Ceramic DIP			
AD421	P	16-Lead Plastic DIP, 0.3 W	AD539	D	18-Lead Ceramic DIP, 0.3 W	AD570	D	18-Lead Ceramic DIP, 0.3 W
AD422	R	16W-Lead SOIC, 2.65 mm		D	16-Lead Ceramic DIP, 0.3 W	AD571	D	18-Lead Ceramic DIP, 0.3 W
AD422	RS	28W-Lead SOIC, 1.78 mm		N	16-Lead Plastic DIP, 0.3 W	AD572	D	DH-32C 32-Lead Ceramic DIP, 0.3 W
AD503	H	8-Pin Can TO-99A		E	20-Leadless Ceramic Chip Carrier	AD573	Q	20-Lead Cerdip, 0.3 W
AD506	H	8-Pin Can TO-99A	AD542A	H	8-Pin Can TO-99A		N	20-Lead Plastic DIP, 0.3 W
AD507	H	8-Pin Can TO-99A	AD544A	H	8-Pin Can TO-99A		P	20-Lead Plastic Leaded Chip Carrier
AD509	H	8-Pin Can TO-99A	AD545	H	8-Pin Can TO-99A			
AD510	H	8-Pin Can TO-99A	AD545A	H	8-Pin Can TO-99A	AD574A	D	28-Lead Ceramic DIP, 0.6 W
			AD546	N	8-Lead Plastic DIP		N	28-Lead Plastic DIP, 0.6 W
			AD547	H	8-Pin Can TO-99A		E	28-Leadless Ceramic Chip Carrier
			AD548	Q	8-Lead Cerdip		P	28-Lead Plastic Leaded Chip Carrier
				N	8-Lead Plastic DIP			
				H	8-Pin Can TO-99A	AD575	N	14-Lead Plastic DIP, 0.3 W
				R	8N-Lead SOIC, 1.75 mm	AD578	D	DH-32B 32-Lead Ceramic DIP, 0.6 W
				H	8-Pin Can TO-99A		N	DH-32B 32-Lead Ceramic DIP, 0.6 W
						AD579	D	DH-32B 32-Lead Ceramic DIP, 0.6 W



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
AD580	H	3-Pin Can, H-03A	AD604	N	24-Lead Plastic DIP, 0.3 W	AD640	D	20-Lead Ceramic DIP, 0.3 W
AD581	H	3-Pin Can, H-03B	AD605	RS	24-Lead SSOP, 1.78 mm	AD641	N	20-Lead Plastic DIP, 0.3 W
AD582	D	14-Lead Ceramic DIP	AD606	R	24W-Lead SOIC, 2.65 mm	AD642	E	20-Leadless Ceramic Chip Carrier
AD582	E	28-Leadless Ceramic Chip Carrier	AD607	N	16-Lead Plastic DIP, 0.3 W	AD643	P	20-Lead Plastic Leaded Chip Carrier
AD584	H	10-Pin Can TO-100	AD608	R	16N-Lead SOIC, 1.75 mm	AD644	N	20-Lead Plastic Leaded Chip Carrier
AD584	E	20-Leadless Ceramic Chip Carrier	AD609	R	16N-Lead SOIC, 1.75 mm	AD645	P	20-Lead Plastic Leaded Chip Carrier
AD585	N	8-Lead Plastic DIP	AD610	R	16N-Lead SOIC, 1.75 mm	AD646	N	20-Lead Plastic Leaded Chip Carrier
AD585	H	8-Pin Can TO-99A	AD611	RS	20-Lead SSOP, 1.78 mm	AD647	E	20-Lead Plastic Leaded Chip Carrier
AD585	Q	14-Lead Cerdip, 0.3 W	AD612	R	16N-Lead SOIC, 1.75 mm	AD648	H	20-Leadless Ceramic Chip Carrier
AD585	E	20-Leadless Ceramic Chip Carrier	AD613	Q	8-Lead Cerdip	AD649	H	8-Pin Can TO-99A
AD585	P	28-Lead Plastic Leaded Chip Carrier	AD614	N	8-Lead Plastic DIP	AD650	N	8-Pin Can TO-99A
AD586	Q	8-Lead Cerdip	AD615	R	8N-Lead SOIC, 1.75 mm	AD651	H	8-Pin Can TO-99A
AD586	N	8-Lead Plastic DIP	AD616	Q	8-Lead Cerdip	AD652	R	8N-Lead SOIC, 1.75 mm
AD587	R	8N-Lead SOIC, 1.75 mm	AD617	N	8-Lead Plastic DIP	AD653	D	14-Lead Ceramic DIP, 0.3 W
AD587	Q	8-Lead Cerdip	AD618	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm	AD654	N	14-Lead Plastic DIP, 0.3 W
AD588	N	8N-Lead SOIC, 1.75 mm	AD619	R	8N-Lead SOIC, 1.75 mm	AD655	P	20-Lead Plastic Leaded Chip Carrier
AD588	Q	16-Lead Ceramic DIP, 0.3 W	AD620	D	16-Lead Ceramic DIP, 0.3 W	AD656	Q	16-Lead Cerdip, 0.3 W
AD589	H	2-Pin Can, H-02A	AD621	N	16-Lead Plastic DIP, 0.3 W	AD657	E	20-Leadless Ceramic Chip Carrier
AD589	R	8N-Lead SOIC, 1.75 mm	AD622	D	16-Lead Plastic DIP, 0.3 W	AD658	P	20-Lead Plastic Leaded Chip Carrier
AD590	F	2-Lead Flatpack	AD623	N	20-Leadless Ceramic Chip Carrier	AD659	N	8-Lead Plastic DIP
AD590	H	3-Pin Can TO-52	AD624	N	8-Lead Plastic DIP	AD660	R	8N-Lead SOIC, 1.75 mm
AD592	N	3-Lead Plastic TO-92	AD625	R	8N-Lead SOIC, 1.75 mm	AD661	Q	24-Lead Cerdip, 0.3 W
AD594	D	14-Lead Ceramic DIP	AD626	D	20-Lead Ceramic DIP, 0.3 W	AD662	N	24-Lead Plastic DIP, 0.3 W
AD594	Q	14-Lead Cerdip, 0.3 W	AD627	E	20-Lead Plastic DIP, 0.3 W	AD663	R	24W-Lead SOIC, 2.65 mm
AD595	D	14-Lead Ceramic DIP	AD628	N	10-Pin Can TO-100	AD664	D	28-Lead Ceramic DIP, 0.6 W
AD596	Q	14-Lead Cerdip, 0.3 W	AD629	D	14-Lead Ceramic DIP	AD665	N	28-Lead Plastic DIP, 0.6 W
AD597	H	10-Pin Can TO-100	AD630	N	8-Lead Plastic DIP	AD666	J	44-Leadless Ceramic Chip Carrier
AD597	H	10-Pin Can TO-100	AD631	R	8N-Lead SOIC, 1.75 mm	AD667	E	44-Leadless Ceramic Chip Carrier
AD598	R	8N-Lead SOIC, 1.75 mm	AD632	H	10-Pin Can TO-100	AD668	P	44-Lead Plastic Leaded Chip Carrier
AD598	D	20-Lead Ceramic DIP, 0.3 W	AD633	D	14-Lead Ceramic DIP	AD669	D	28-Lead Ceramic DIP, 0.6 W
AD598	R	20W-Lead SOIC, 2.64 mm	AD634	N	8-Lead Plastic DIP	AD670	N	28-Lead Plastic DIP, 0.6 W
AD600	Q	16-Lead Ceramic DIP, 0.3 W	AD635	R	8N-Lead SOIC, 1.75 mm	AD671	E	28-Leadless Ceramic Chip Carrier
AD600	N	16-Lead Plastic DIP, 0.3 W	AD636	H	10-Pin Can TO-100	AD672	P	28-Lead Plastic Leaded Chip Carrier
AD602	R	16W-Lead SOIC, 2.65 mm	AD637	D	14-Lead Ceramic DIP	AD673	D	28-Lead Ceramic DIP, 0.6 W
AD602	Q	16-Lead Ceramic DIP, 0.3 W	AD638	D	14-Lead Ceramic DIP	AD674	N	28-Lead Plastic DIP, 0.6 W
AD602	N	16-Lead Plastic DIP, 0.3 W	AD639	Q	16 W-Lead SOIC, 2.64 mm	AD675	E	28-Leadless Ceramic Chip Carrier
AD603	R	16W-Lead SOIC, 2.65 mm	AD640	R	16-Lead Ceramic DIP	AD676	P	28-Lead Plastic Leaded Chip Carrier
AD603	Q	8-Lead Cerdip	AD641	D	16-Lead Ceramic DIP	AD677	D	28-Lead Ceramic DIP, 0.6 W
AD603	N	8-Lead Plastic DIP	AD642	Q	16-Lead Ceramic DIP	AD678	N	28-Lead Plastic DIP, 0.6 W
AD603	R	8N-Lead SOIC, 1.75 mm	AD643	D	16-Lead Ceramic DIP	AD679	E	28-Leadless Ceramic Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD668	Q	24-Lead Cerdip, 0.3 W
AD669	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	R	28 W-Lead SOIC, 2.44 mm
AD670	D	20-Lead Ceramic DIP, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD670	P	20-Lead Plastic Leaded Chip Carrier
		Carrier
AD671	D	24-Lead Ceramic DIP, 0.6 W
AD673	D	20-Lead Ceramic DIP, 0.6 W
	N	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
		Carrier
AD674B	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	E	28-Leadless Ceramic Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD676	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
AD677	D	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.28 W
	R	28W-Lead SOIC, 2.44 mm
AD678	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	J	44-Leaded Ceramic Chip Carrier
	E	44-Leaded Ceramic Chip Carrier
AD679	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	J	44-Leaded Ceramic Chip Carrier
	E	44-Leaded Ceramic Chip Carrier
AD680	T	3-Lead Plastic TO-92
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD688	Q	16-Lead Cerdip, 0.3 W
AD693	D	20-Lead Ceramic DIP, 0.3 W
	Q	20-Lead Cerdip, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD694	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
AD698	Q	24-Lead Cerdip, 0.6 W
	P	28-Lead PLCC

Model	Suffix	Package Description
AD737	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD743	R	16W SOIC, 2.65 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD744	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	H	8-Pin Can TO-99A
	R	8N-Lead SOIC, 1.75 mm
AD745	R	16W SOIC, 2.79 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD746	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD760	Q	28-Lead Cerdip, 0.6 W
AD766	D	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
AD767	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier
AD768	R	28 W-Lead SOIC, 2.64 mm
AD768B	R	28 W-Lead SOIC, 2.64 mm
AD773	D	28-Lead Ceramic DIP, 0.6 W
AD774	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	R	28 W-Lead SOIC, 2.44 mm
AD775	N	24-Lead Plastic DIP, 0.6 W
	R	24W-Lead SOIC, 2.65 mm
AD776	N	20-Lead Plastic DIP, 0.3 W
AD779	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
AD780	R	8-Lead SOIC, 2.59 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD781	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD783	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
AD704	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	R	16W-Lead SOIC, 2.64 mm
	P	20-Lead Plastic Leaded Chip Carrier
	Q	8-Lead Cerdip
AD705	N	8-Lead Plastic DIP
AD706	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD707	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	H	8-Pin Can TO-99A
	R	8N-Lead SOIC, 1.75 mm
AD708	Z	8-Lead Cerdip
	N	8-Lead Plastic DIP
	H	8-Pin Can TO-99A
AD711	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	H	8-Pin Can TO-99A
	R	8N-Lead SOIC, 1.75 mm
AD712	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	H	8-Pin Can TO-99A
	R	8N-Lead SOIC, 1.75 mm
AD713	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
AD720	P	28-Lead Plastic Leaded Chip Carrier
	P	Carrier
AD721	P	28-Lead Plastic Leaded Chip Carrier
	R	16 W SOIC, 2.65 mm
AD722	RS	20-Lead SSOP, 1.78 mm
AD723	R	16 W SOIC, 2.65 mm
AD724	R	16 W SOIC, 2.65 mm
AD725	R	16 W SOIC, 2.65 mm
AD734	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
AD736	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD790	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD795	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD797	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD800	Q	20-Lead Cerdip, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
	Q	20-Lead Cerdip, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
AD805	N	20-Lead Plastic DIP, 0.3 W
AD807	R	16N-Lead SOIC, 1.75 mm
AD808	S	16N-Lead SOIC, 1.75 mm
AD809	R	16N-Lead SOIC, 1.75 mm
AD810	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	R	16 W SOIC, 2.65 mm
AD811	R	20W-Lead SOIC, 2.64 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD812	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD813	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
AD815	VR	15-Lead Custom Pwr Surf Mount
	Y	15-Lead SIP Custom Pwr Mount, 90° Lead Form
AD816	VR	15-Lead Custom Pwr Surf Mount
	Y	15-Lead SIP Custom Pwr Mount, 90° Lead Form
	YS	15-Lead SIP Custom Pwr Mount, Straight Lead Form
AD817	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
AD818	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD820	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD822	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD823	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD824	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
AD825	R	14N-Lead SOIC, 1.75 mm
AD826	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD827	R	16 W-Lead SOIC, 2.64 mm
	E	20-Leadless Ceramic Chip Carrier
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	N	8-Lead Plastic DIP
AD828	N	8N-Lead SOIC, 1.75 mm
AD829	E	20-Leadless Ceramic Chip Carrier
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD830	R	8N-Lead SOIC, 1.75 mm
AD831	P	20-Lead Plastic Leaded Chip Carrier
AD834	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD835	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD840	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD841	H	12-Pin Can TO-12
	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	H	12-Pin Can TO-12
	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	N	8-Lead Cerdip
	R	8N-Lead SOIC, 1.75 mm
	D	28-Lead Ceramic DIP, 0.6 W
AD871	D	28-Lead Ceramic DIP, 0.6 W
AD872	E	44-Leadless Ceramic Chip Carrier
	D	28-Lead Ceramic DIP, 0.6 W
AD875	E	44-Leadless Ceramic Chip Carrier
AD876	ST	48-Lead TQFP, 1.5 mm
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.65 mm
	ST	48-Lead TQFP, 1.5 mm
AD878	P	44-Lead Plastic Leaded Chip Carrier
AD974	N	28-Lead Plastic DIP, 0.3 W
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.44 mm
AD975	ST	44-Lead Metric TQFP, 1.66 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD976	N	28-Lead Plastic DIP, 0.3 W
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.44 mm
AD976A	N	28-Lead Plastic DIP, 0.3 W
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.44 mm
AD977	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
	RS	28-Lead SSOP, 1.79 mm
AD977A	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
	RS	28-Lead SSOP, 1.79 mm
AD1315	Z	16-Leaded Ceramic Gull Wing
AD1317	Z	16-Leaded Ceramic Gull Wing
AD1324	Z	16-Leaded Ceramic Gull Wing
AD1332	D	DH-40A = 40-Lead Bottom Braze Ceramic 2.12 × 0.77 × 0.225
AD1334	D	DH-40A = 40-Lead Bottom Braze Ceramic 2.12 × 0.77 × 0.225
AD1341	Z	100-Leaded Ceramic Quad Flatpack
AD1362	D	DH-32A 1.75 × 1.1 × 0.225
AD1376	D	DH-32E 1 Bottom Braze Ceramic 75 × 1.1 × 0.225
AD1377	D	DH-32E 1 Bottom Braze Ceramic 75 × 1.1 × 0.225
AD1378	D	DH-32E 1 Bottom Braze Ceramic 75 × 1.1 × 0.225
AD1380	D	DH-48A 2.42 × 0.63 × 0.225
AD1382	D	DH-48A 2.42 × 0.63 × 0.225
AD1385	D	DH-48A 2.42 × 0.63 × 0.225
AD1403	N	8-Lead Plastic DIP
AD1403A	N	8-Lead Plastic DIP
AD1552	R	28 W-Lead SOIC, 2.44 mm
AD1555	R	28 W-Lead SOIC, 2.44 mm
AD1556	S	44-Lead PQFP
AD1580	RT	3-Lead SOT-23, 1.12 mm
AD1581	RT	3-Lead SOT-23, 1.12 mm
AD1582	RT	3-Lead SOT-23, 1.12 mm
AD1583	RT	3-Lead SOT-23, 1.12 mm
AD1584	RT	3-Lead SOT-23, 1.12 mm
AD1585	RT	3-Lead SOT-23, 1.12 mm

Model	Suffix	Package Description
AD1671	Q	24-Lead Cerdip, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD1672	P	28-Lead Plastic Leaded Chip Carrier
AD1674	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	R	28 W-Lead SOIC, 2.44 mm
AD1809	S	208-Lead PQFP
AD1812	S	160-Lead PQFP
	ST	160-Lead TQFP (Contact Factory)
AD1815	S	100-Lead PQFP 2.4 mm
AD1816A	ST	100-Lead Metric TQFP, 1.6 mm
	S	100-Lead PQFP
AD1817A	S	100-Lead PQFP
AD1818	S	128-Lead PQFP
AD1819	ST	48-Lead TQFP, 1.5 mm
AD1819A	ST	48-Lead TQFP, 1.5 mm
AD1820	S	100-Lead PQFP
AD1821	S	100-Lead PQFP
AD1843	S	80-Lead PQFP, 14.1 × 14.1 × 2.45 mm
AD1845	ST	100-Lead Metric TQFP, 1.6 mm
	P	68-Lead Plastic Leaded Chip Carrier
AD1846	P	68-Lead Plastic Leaded Chip Carrier
AD1847	ST	44-Lead Metric TQFP, 1.66 mm
	P	44-Lead Plastic Leaded Chip Carrier
AD1848	ST	64-Lead TQFP
	P	68-Lead Plastic Leaded Chip Carrier
AD1849	P	44-Lead Plastic Leaded Chip Carrier
AD1851	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
AD1855	RS	28-Lead SSOP, 1.78 mm
AD1856	N	16-Lead Plastic DIP, 0.3 W
	R	16-Lead W SOIC, 2.65 mm
AD1857	RS	20-Lead SSOP, 1.78 mm
AD1858	RS	20-Lead SSOP, 1.78 mm

Model	Suffix	Package Description
AD1859	S	28-Lead SSOP, 1.85 mm
	R	28-Lead W SOIC, 2.44 mm
AD1860	N	16-Lead Plastic DIP, 0.3 W
	R	16-Lead W SOIC, 2.65 mm
AD1861	N	16-Lead Plastic DIP, 0.3 W
	R	16-Lead W SOIC, 2.65 mm
AD1862	N	16-Lead Plastic DIP, 0.3 W
AD1864	N	24-Lead Plastic DIP, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier
AD1865	N	24-Lead Plastic DIP, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.65 mm
AD1866	N	16-Lead Plastic DIP, 0.3 W
	R	16-Lead W SOIC, 2.64 mm
AD1868	N	16-Lead Plastic DIP, 0.3 W
	R	16-Lead W SOIC, 2.65 mm
AD1871	RS	24-Lead SSOP, 1.78 mm
AD1876	N	16-Lead Plastic DIP, 0.3 W
AD1877	R	28-Lead W SOIC, 2.65 mm
AD1878	D	28-Lead Ceramic DIP, 0.6 W
AD1879	D	28-Lead Ceramic DIP, 0.6 W
AD1890	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
AD1891	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
AD1892	R	28-Lead W SOIC, 2.44 mm
AD1893	N	28-Lead Plastic DIP, 0.6 W
	ST	44-Lead Metric TQFP, 1.66 mm
AD2700	D	DH-14C, 14-Lead Bottom Braze Ceramic 0.81 × 0.51 × 0.2
AD2701	D	DH-14C 14-Lead Bottom Braze Ceramic 0.81 × 0.51 × 0.2
AD2702	D	DH-14B 14-Lead Bottom Braze Ceramic 0.81 × 0.51 × 0.2
AD2710	N	DH-14D, Side Braze Ceramic, Non-Herm
AD2712	N	DH-14D, Side Braze Ceramic, Non-Herm
AD5211	D	DH-24C Side Braze Ceramic



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD5214	D	DH-24C Side Brazed Ceramic
AD5215	D	DH-24C Side Brazed Ceramic
AD5300	RT	6-Lead SOT-23, 1.12 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
AD5310	RT	6-Lead SOT-23, 1.12 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
AD5320	RT	6-Lead SOT-23, 1.12 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
AD5539	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
AD6121	RS	28-Lead SSOP, 1.78 mm
AD6122	RS	28-Lead SSOP, 1.78 mm
AD6190	RS	28-Lead SSOP, 1.78 mm
AD6201		144-Lead
AD6402	RS	28-Lead SSOP, 1.79 mm
AD6403	S	100-Lead PQFP
AD6421	ST	64-Lead Metric TQFP, 1.6 mm
AD6431	ST	52-Lead Metric TQFP, 1.6 mm
AD6432	ST	44-Lead Metric TQFP, 1.66 mm
AD6435	ST	128-Lead TQFP, 1.6 mm
AD6436	S	128-Lead TQFP, 1.6 mm
AD6437	S	80-Lead PGFP
AD6442	S	128-Lead PQFP
AD6448	P	68-Lead Plastic Leaded Chip Carrier
AD6458	RS	20-Lead SSOP, 1.78 mm
AD6459	RS	20-Lead SSOP, 1.78 mm
AD6470	P	68-Lead Plastic Leaded Chip Carrier
AD6509	S	16N-Lead SOIC, 1.75 mm
AD6600	ST	44-Lead Metric TQFP, 1.66 mm
AD6620	S	80 PQFP, 14.1 $\times$ 14.1 $\times$ 2.45 mm
AD6640	ST	44-Lead Metric TQFP, 1.66 mm
AD6742	ST	44-Lead TQFP, 1.5 mm
AD6816	ST	44-Lead Metric TQFP, 1.66 mm
AD7002	S	44-Lead PQFP
AD7008	P	44-Lead Plastic Leaded Chip Carrier
AD7010	RS	24-Lead SSOP, 1.78 mm
AD7011	RS	24-Lead SSOP, 1.78 mm

Model	Suffix	Package Description
AD7013	RS	28-Lead SSOP, 1.78 mm
AD7015	ST	80-Lead Metric TQFP, 1.6 mm
AD7111	Q	16-Lead Cerdip, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W-Lead SOIC, 2.64 mm
	E	20-Leadless Ceramic Chip Carrier
AD7111A	N	16-Lead Plastic DIP, 0.3 W
	R	16 W-Lead SOIC, 2.64 mm
AD7112	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.65 mm
AD7118	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
AD7224	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7225	R	20W-Lead SOIC, 2.64 mm
	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
AD7225A	R	24W-Lead SOIC, 2.65 mm
AD7226	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7228	R	20W-Lead SOIC, 2.64 mm
	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
AD7228A	R	24W-Lead SOIC, 2.65 mm
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
AD7233	N	8-Lead Plastic DIP
AD7237	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
AD7237A	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
AD7240	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
AD7242	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
AD7243	R	28 W-Lead SOIC, 2.65 mm
	Q	16-Lead Cerdip, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.79 mm
AD7244	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	R	28 W-Lead SOIC, 2.65 mm
AD7245	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
AD7245A	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
AD7247	R	28 W-Lead SOIC, 2.65 mm
	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
AD7247A	R	24W-Lead SOIC, 2.65 mm
	N	24-Lead Plastic DIP, 0.3 W
AD7248	R	24W-Lead SOIC, 2.65 mm
	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7248A	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
	R	20N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD7249	Q	16-Lead Cerdip, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.79 mm
AD7302	N	20-Lead Plastic DIP, 0.3 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20N-Lead SOIC, 1.75 mm
AD7303	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7304	RU	16-Lead TSSOP, 1.1 mm
	R	16 W-Lead SOIC, 2.64 mm
	N	18-Lead Plastic DIP, 0.3 W
AD7305	RU	20-Lead TSSOP, 1.1 mm
AD7306	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
AD7316	R	8N-Lead SOIC, 1.75 mm
AD7317	R	16N-Lead SOIC, 1.75 mm
	N	18-Lead Plastic DIP, 0.3 W
AD7318	N	18-Lead Plastic DIP, 0.3 W
	R	8N-Lead SOIC, 1.75 mm
AD7322	RT	6-Lead SOT-23, 1.12 mm
AD7339	S	52-Lead PQFP
AD7376	N	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1.1 mm
	R	16 W SOIC, 2.65 mm
AD7390	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD7391	N	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.1 mm
	R	8N-Lead SOIC, 1.75 mm
AD7392	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
AD7393	N	20-Lead Plastic DIP, 0.3 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20W-Lead SOIC, 2.64 mm
AD7394	N	14-Lead Plastic DIP, 0.3 W
	R	14W-Lead SOIC, 2.64 mm
AD7395	N	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1.1 mm
	R	14W-Lead SOIC, 2.64 mm
AD7396	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.64 mm

Model	Suffix	Package Description
AD7397	N	24-Lead Plastic DIP, 0.3 W
	RU	24-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.64 mm
AD7398	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	N	18-Lead Plastic DIP, 0.3 W
AD7416	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
	R	8N-Lead SOIC, 1.75 mm
AD7417	RU	16-Lead TSSOP, 1.1 mm
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	R	16N-Lead SOIC, 1.75 mm
AD7418	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr, 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
	R	8N-Lead SOIC, 1.75 mm
AD7501	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
AD7502	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD7503	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD7506	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
AD7507	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier

Model	Suffix	Package Description
AD7510DI	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7511DI	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7512DI	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7520	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
AD7523	N	16-Lead Plastic DIP, 0.3 W
AD7524	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7528	RS	20-Lead SSOP, 1.78 mm
	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
	R	20W-Lead SOIC, 2.64 mm
AD7533	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
	R	20W-Lead SOIC, 2.64 mm
AD7534	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
AD7535	Q	28-Lead Cerdip, 0.6 W	AD7545A	Q	20-Lead Cerdip, 0.3 W	AD7574	Q	18-Lead Cerdip, 0.3 W
	N	28-Lead Plastic DIP, 0.6 W		N	20-Lead Plastic DIP, 0.3 W		N	18-Lead Plastic DIP, 0.3 W
	E	28-Leadless Ceramic Chip Carrier		E	20-Leadless Ceramic Chip Carrier		E	20-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier		P	20-Lead Plastic Leaded Chip Carrier	AD7575	Q	18-Lead Cerdip, 0.3 W
AD7536	Q	28-Lead Cerdip, 0.6 W	AD7547	R	20W-Lead SOIC, 2.64 mm		N	18-Lead Plastic DIP, 0.3 W
	N	28-Lead Plastic DIP, 0.6 W		Q	24-Lead Cerdip, 0.3 W		P	20-Lead Plastic Leaded Chip Carrier
	E	28-Leadless Ceramic Chip Carrier		N	24-Lead Plastic DIP, 0.3 W	AD7576	Q	18-Lead Cerdip, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier		R	24W-Lead SOIC, 2.65 mm		N	18-Lead Plastic DIP, 0.3 W
AD7537	Q	24-Lead Cerdip, 0.3 W	AD7548	E	28-Leadless Ceramic Chip Carrier		E	20-Leadless Ceramic Chip Carrier
	N	24-Lead Plastic DIP, 0.6 W		P	28-Lead Plastic Leaded Chip Carrier		P	20-Lead Plastic Leaded Chip Carrier
	E	28-Leadless Ceramic Chip Carrier		Q	20-Lead Cerdip, 0.3 W	AD7578	Q	24-Lead Cerdip, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier		N	20-Lead Plastic DIP, 0.3 W		N	24-Lead Plastic DIP, 0.3 W
AD7538	Q	24-Lead Cerdip, 0.3 W	AD7549	E	20-Leadless Ceramic Chip Carrier		Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.6 W		P	20-Lead Plastic Leaded Chip Carrier	AD7579	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm		Q	20W-Lead SOIC, 2.64 mm		Q	24-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier		R	20-Lead Cerdip, 0.3 W	AD7580	N	24-Lead Plastic DIP, 0.3 W
AD7541A	Q	18-Lead Cerdip, 0.3 W	AD7564	N	28-Lead Plastic DIP, 0.6 W		E	28-Leadless Ceramic Chip Carrier
	N	18-Lead Plastic DIP, 0.3 W		S	28-Lead SSOP, 1.78 mm		P	28-Lead Plastic Leaded Chip Carrier
	R	18W-Lead SOIC, 2.65 mm		R	28 W-Lead SOIC, 2.44 mm	AD7581	Q	28-Lead Cerdip, 0.6 W
	P	20-Lead Plastic Leaded Chip Carrier		P	44-Lead Plastic Leaded Chip Carrier		N	28-Lead Plastic DIP, 0.6 W
AD7542	E	28-Leadless Ceramic Chip Carrier	AD7568	Q	24-Lead Cerdip, 0.3 W		Q	28-Leadless Ceramic Chip Carrier
	D	16-Lead Ceramic DIP, 0.3 W		N	24-Lead Plastic DIP, 0.3 W	AD7582	N	28-Lead Plastic DIP, 0.6 W
	D	16-Lead Ceramic DIP, 0.3 W		E	28-Leadless Ceramic Chip Carrier		E	28-Leadless Ceramic Chip Carrier
	N	16-Lead Plastic DIP, 0.3 W		P	28-Lead Plastic Leaded Chip Carrier		P	28-Lead Plastic Leaded Chip Carrier
AD7543	E	20-Leadless Ceramic Chip Carrier	AD7572	R	28 W-Lead SOIC, 2.65 mm	AD7590	Q	16-Lead Ceramic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier		Q	24-Lead Cerdip, 0.3 W		N	16-Lead Plastic DIP, 0.3 W
	Q	16-Lead Ceramic DIP, 0.3 W		N	24-Lead Plastic DIP, 0.3 W		E	20-Leadless Ceramic Chip Carrier
	N	16 W SOIC, 2.65 mm		R	24W-Lead SOIC, 2.65 mm		P	20-Lead Plastic Leaded Chip Carrier
AD7545	E	20-Leadless Ceramic Chip Carrier	AD7572A	Q	28-Leadless Ceramic Chip Carrier	AD7592	Q	14-Lead Cerdip, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier		R	24-Lead Cerdip, 0.3 W		N	14-Lead Plastic DIP, 0.3 W
	Q	20-Lead Cerdip, 0.3 W		E	24-Leadless Ceramic Chip Carrier		E	20-Leadless Ceramic Chip Carrier
	N	20-Lead Plastic DIP, 0.3 W		Q	24-Lead Cerdip, 0.3 W		P	20-Lead Plastic Leaded Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD7628	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7669	R	20W-Lead SOIC, 2.64 mm
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7672	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	P	28-Lead Plastic Leaded Chip Carrier
	Q	20-Lead Cerdip, 0.3 W
AD7701	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.65 mm
	RS	28-Lead SSOP, 2.0 mm
	Q	20-Lead Cerdip, 0.3 W
AD7703	N	20-Lead Plastic DIP, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.65 mm
	RU	16-Lead TSSOP, 1.1 mm
AD7705	R	16 W-Lead SOIC, 2.65 mm
	Q	24-Lead Cerdip, 0.3 W
	N	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
AD7710	Q	24-Lead Cerdip, 0.3 W
	N	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	Q	24-Lead Cerdip, 0.3 W
AD7711	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	Q	24-Lead Cerdip, 0.3 W
AD7711A	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	Q	24-Lead Cerdip, 0.3 W
AD7712	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	Q	24-Lead Cerdip, 0.3 W
AD7713	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	Q	24-Lead Cerdip, 0.3 W
AD7714	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	R	24-Lead Plastic DIP, 0.3 W
	RS	28-Lead SSOP, 1.78 mm

Model	Suffix	Package Description
AD7715	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
	S	44-Lead PQFP
	P	44-Lead Plastic Leaded Chip Carrier
AD7716	RU	28-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.65 mm
	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
AD7720	S	44-Lead PQFP
	S	44-Lead PQFP
	RS	28-Lead SSOP, 1.78 mm
	N	24-Lead Plastic DIP, 0.3 W
AD7722	RU	24-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.65 mm
	Q	28-Lead TSSOP, 1.1 mm
	N	24-Lead Plastic DIP, 0.3 W
AD7723	R	24-Lead TSSOP, 1.1 mm
	RU	24-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.65 mm
	RU	24-Lead Plastic DIP, 0.3 W
AD7729	N	24-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.65 mm
	RT	6-Lead SOT-23, 1.0 mm
	N	8-Lead Plastic DIP
AD7730	R	8N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	N	20-Lead Plastic DIP, 0.3 W
AD7731	R	20W-Lead SOIC, 2.64 mm
	N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.64 mm
	N	20-Lead Plastic DIP, 0.3 W
AD7740	R	28 W-Lead SOIC, 2.44 mm
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7741	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7742	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7750	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7751	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7752	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7759	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7773	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7774	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7776	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7777	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm
AD7778	R	28-Lead Plastic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm

Model	Suffix	Package Description
AD7801	RU	20-Lead TSSOP, 1.1 mm
	R	20N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
AD7804	N	28-Lead Plastic DIP, 0.6 W
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.65 mm
	N	24-Lead Plastic DIP, 0.3 W
AD7805	R	24W-Lead SOIC, 2.65 mm
	ST	44-Lead Thin Quad Flatpack 1.2 mm
	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
AD7810	R	8N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
AD7812	N	20-Lead Plastic DIP, 0.3 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.3 W
AD7813	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7816	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7817	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7818	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7819	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	Q	20-Lead Cerdip, 0.3 W
AD7820	N	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
	R	20W-Lead SOIC, 2.64 mm
	R	20W-Lead SOIC, 2.64 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD7821	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD7822	R	20W-Lead SOIC, 2.64 mm
	N	20-Lead Plastic DIP, 0.28 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20W-Lead SOIC, 2.65 mm
AD7823	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr
		1.09 mm
	R	8N-Lead SOIC, 1.75 mm
AD7824	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	RU	24-Lead TSSOP, 1.1 mm
AD7825	R	24W-Lead SOIC, 2.65 mm
	N	24-Lead Plastic DIP, 0.58 W
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD7827	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.64 mm
AD7829	N	28-Lead Plastic DIP, 0.6 W
	RU	28-Lead TSSOP, 1.1 mm
	RU	28-Lead TSSOP, 1.1 mm
	R	28 W-Lead SOIC, 2.65 mm
AD7834	R	28 W-Lead SOIC, 2.65 mm
	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	R	28 W-Lead SOIC, 2.65 mm
AD7835	S	44-Lead PQFP
	S	44-Lead PQFP
	R	24W-Lead SOIC, 2.44 mm
	Q	24-Lead Cerdip, 0.3 W
AD7838	N	24-Lead Plastic DIP, 0.3 W
	S	44-Lead PQFP
	S	44-Lead PQFP
	S	44-Lead PQFP

Model	Suffix	Package Description	Model	Suffix	Package Description
AD7859	S	44-Lead PQFP	AD7859L	S	44-Lead PQFP
	P	44-Lead Plastic Leaded Chip Carrier		P	44-Lead Plastic Leaded Chip Carrier
AD7861	P	44-Lead Plastic Leaded Chip Carrier	AD7862	N	28-Lead Plastic DIP, 0.6 W
				RS	28-Lead SSOP, 1.78 mm
				R	28 W-Lead SOIC, 2.65 mm
				N	28-Lead Plastic DIP, 0.6 W
AD7863	R	28 W-Lead SOIC, 2.65 mm	AD7864	RS	28 W-Lead SOIC, 2.65 mm
				S	44-Lead PQFP
				Q	24-Lead Cerdip, 0.3 W
				N	24-Lead Plastic DIP, 0.3 W
AD7868	R	28 W-Lead SOIC, 2.65 mm	AD7869	N	24-Lead Plastic DIP, 0.3 W
				R	28 W-Lead SOIC, 2.65 mm
				Q	24-Lead Cerdip, 0.3 W
				N	24-Lead Plastic DIP, 0.3 W
AD7870	P	28-Lead Plastic Leaded Chip Carrier	AD7870A	N	24-Lead Plastic DIP, 0.3 W
				Q	28-Lead Cerdip, 0.6 W
				N	28-Lead Plastic DIP, 0.6 W
				P	28-Lead Plastic Leaded Chip Carrier
AD7871	Q	28-Lead Cerdip, 0.6 W	AD7872	Q	16-Lead Ceramic DIP, 0.3 W
				N	16-Lead Plastic DIP, 0.3 W
				R	16N-Lead SOIC, 1.75 mm
				Q	28-Lead Cerdip, 0.6 W
AD7874	N	28-Lead Plastic DIP, 0.6 W	AD7875	N	28-Lead Plastic DIP, 0.6 W
				E	28-Leadless Ceramic Chip Carrier
				R	28 W-Lead SOIC, 2.65 mm
				Q	24-Lead Cerdip, 0.3 W
AD7875	N	24-Lead Plastic DIP, 0.3 W	AD7875	N	24-Lead Plastic DIP, 0.3 W
				P	28-Lead Plastic Leaded Chip Carrier
AD7878	Q	16-Lead Ceramic DIP, 0.3 W	AD7878	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W		N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm		R	16N-Lead SOIC, 1.75 mm
	Q	28-Lead Cerdip, 0.6 W		Q	28-Lead Plastic DIP, 0.6 W
AD7879	N	28-Lead Plastic DIP, 0.6 W	AD7879	N	28-Lead Plastic DIP, 0.6 W
				E	28-Leadless Ceramic Chip Carrier
				R	28 W-Lead SOIC, 2.65 mm
				Q	24-Lead Cerdip, 0.3 W
AD7880	N	24-Lead Plastic DIP, 0.3 W	AD7880	N	24-Lead Plastic DIP, 0.3 W
				P	28-Lead Plastic Leaded Chip Carrier
AD7881	Q	20-Lead Cerdip, 0.3 W	AD7881	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W		N	20-Lead Plastic DIP, 0.3 W
	R	20W-Lead SOIC, 2.65 mm		R	20W-Lead SOIC, 2.65 mm
	N	24-Lead Plastic DIP, 0.3 W		N	24-Lead Plastic DIP, 0.3 W
AD7882	RS	24-Lead SSOP, 1.78 mm	AD7882	RS	24-Lead SSOP, 1.78 mm
	R	24W-Lead SOIC, 2.65 mm		R	24W-Lead SOIC, 2.65 mm
	Q	28-Lead Cerdip, 0.6 W		Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.3 W		N	28-Lead Plastic DIP, 0.3 W
AD7883	RS	28-Lead SSOP, 1.78 mm	AD7883	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.65 mm		R	28 W-Lead SOIC, 2.65 mm
	TBD			TBD	
AD7884	N	24-Lead Plastic DIP, 0.3 W	AD7884	N	24-Lead Plastic DIP, 0.3 W
	RS	24-Lead SSOP, 1.78 mm		RS	24-Lead SSOP, 1.78 mm
	R	24W-Lead SOIC, 2.44 mm		R	24W-Lead SOIC, 2.44 mm
	N	24-Lead Plastic DIP, 0.6 W		N	24-Lead Plastic DIP, 0.6 W
AD7885	RS	24-Lead SSOP, 2.00 mm	AD7885	RS	24-Lead SSOP, 2.00 mm
	R	24W-Lead SOIC, 2.65 mm		R	24W-Lead SOIC, 2.65 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD7876	Q	24-Lead Cerdip, 0.3 W
AD7878	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
AD7880	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
AD7882	R	24W-Lead SOIC, 2.65 mm
	Q	40-Lead Ceramic DIP
AD7883	S	40-Lead PQFP
	N	24-Lead Plastic DIP, 0.3 W
AD7884	R	24W-Lead SOIC, 2.65 mm
	Q	28-Lead Cerdip, 0.6 W
AD7885	P	44-Lead Plastic Leaded Chip Carrier
	Q	28-Lead Cerdip, 0.6 W
AD7885A	P	44-Lead Plastic Leaded Chip Carrier
	P	44-Lead Plastic Leaded Chip Carrier
AD7886	D	28-Lead Ceramic DIP, 0.6 W
	P	44-Lead Plastic Leaded Chip Carrier
AD7887	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
AD7888R	16N	16N-Lead SOIC, 1.75 mm
AD7889	RS	16-Lead SSOP, 1.75 mm
AD7890	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
AD7891	R	24W-Lead SOIC, 2.65 mm
	S	44-Lead PQFP
AD7892	P	44-Lead Plastic Leaded Chip Carrier
	Q	24-Lead Cerdip, 0.3 W
AD7893	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
AD7894	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	R	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
AD7895	N	8-Lead Plastic DIP
AD7896	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD7897	N	28-Lead Plastic DIP, 0.6 W
AD7898	RS	24-Lead SSOP, 1.78 mm
AD7943	N	16-Lead Plastic DIP, 0.3 W
	RS	20-Lead SSOP, 1.78 mm
	R	20N-Lead SOIC, 1.78 mm
	RS	20-Lead SSOP, 1.78 mm
AD7945	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	R	20N-Lead SOIC, 1.78 mm
	RS	20-Lead SSOP, 1.78 mm
AD7948	N	20-Lead Plastic DIP, 0.3 W
	R	20N-Lead SOIC, 1.78 mm
	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
AD7949	Q	8-Lead Cerdip
AD8001	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8002	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
AD8004	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8005	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8009	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8010	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8011	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8012	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8013	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
AD8015	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	N	8-Lead Plastic DIP

Model	Suffix	Package Description
AD8023	N	14-Lead Plastic DIP, 0.3 W
AD8031	R	14N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD8032	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8036	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD8037	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8041	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD8042	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8044	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD8047	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8048	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
AD8051	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8052	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8054	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8055	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8056	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8072	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8073	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8079	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8108	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8109	R	8N-Lead SOIC, 1.75 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD8110	ST	80-Lead TQFP
AD8111	ST	80-Lead TQFP
AD8116	ST	128-Lead 1.5 mm TQFP
AD8170	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8174	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
	R	14N-Lead SOIC, 1.75 mm
AD8180	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8182	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
AD8184	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
AD8300	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8303	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
	RU	16-Lead TSSOP, 1.1 mm
AD8306	R	16 W-Lead SOIC, 2.64 mm
	N	18-Lead Plastic DIP, 0.3 W
AD8307	R	8N-Lead SOIC, 1.75 mm
AD8319	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.65 mm
AD8320	RP	20-Lead, Thermally Enhanced SOIC
AD8325	R	20N-Lead SOIC, 1.75 mm
AD8390	N	40-Lead Plastic DIP, 0.6 W
	S	44-Lead PQFP
AD8400	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8401	R	28 W-Lead SOIC, 2.65 mm
AD8402	RU	14-Lead TSSOP, 1.1 mm
	R	14N-Lead SOIC, 1.75 mm
AD8403	N	24-Lead Plastic DIP, 0.3 W
	RU	24-Lead TSSOP, 1.1 mm
	R	24W-Lead SOIC, 2.65 mm
AD8501	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8502	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8504	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
AD8509	RU	48-Lead TSSOP, 1.1 mm
AD8511	RU	48-Lead TSSOP, 1.1 mm
AD8519	RT	5-Lead SOT-23, 1.12 mm
AD8522	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
	RU	16-Lead TSSOP, 1.1 mm
AD8531	RT	5-Lead SOT-23, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
AD8532	N	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
AD8534	RU	14-Lead TSSOP, 1 mm
	R	14N-Lead SOIC, 1.75 mm
AD8541	RT	5-Lead SOT-23, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
AD8542	N	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
AD8544	N	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1 mm
	R	14N-Lead SOIC, 1.75 mm
AD8551	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8552	N	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
AD8554	N	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1 mm
	R	14N-Lead SOIC, 1.75 mm
AD8561	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
AD8564	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1 mm
	R	16N-Lead SOIC, 1.75 mm
AD8582	N	24-Lead Plastic DIP, 0.3 W
	R	24W-Lead SOIC, 2.64 mm
AD8598	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
AD8600	P	44-Lead Plastic Leaded Chip Carrier
AD8698	RW	16 W SOIC, 2.65 mm
	N	8-Lead Plastic DIP

Model	Suffix	Package Description
AD8699	RW	16 W SOIC, 2.65 mm
	N	8-Lead Plastic DIP
AD8801	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
AD8802	N	20-Lead Plastic DIP, 0.3 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20W-Lead SOIC, 2.72 mm
AD8803	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
AD8804	N	20-Lead Plastic DIP, 0.3 W
	RU	20-Lead TSSOP, 1.1 mm
	R	20W-Lead SOIC, 2.72 mm
AD9000	D	16-Lead Ceramic DIP, 0.3 W
AD9002	D	28-Lead Ceramic DIP, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	E	28-Leadless Ceramic Chip Carrier
AD9003	D	40-Lead Metal Platform DIP
AD9003A	M	40-Lead Metal Platform DIP
AD9005B	D	46-Lead Metal Platform DIP
AD9006	Z	68-Leaded Ceramic Chip Carrier
	E	68-Leadless Ceramic Chip Carrier
AD9007	M	46-Lead Metal Platform DIP
AD9012	Q	28-Lead Cerdip, 0.6 W
	Z	28-Leaded Ceramic Chip Carrier
	E	28-Leadless Ceramic Chip Carrier
AD9014	HYB	2 Hybrids Mounted on a Substrate
AD9016	Z	68-Leaded Ceramic Chip Carrier
	E	68-Leadless Ceramic Chip Carrier
AD9020	Z	68-Leaded Ceramic Chip Carrier
	E	68-Leadless Ceramic Chip Carrier
AD9022	D	28-Lead Ceramic DIP, 0.6 W
	Z	28-Leaded Ceramic Chip Carrier, 0.51 W
AD9023	D	28-Lead Ceramic DIP, 0.6 W
	Z	28-Leaded Ceramic Chip Carrier, 0.51 W
AD9026	D	28-Lead Ceramic DIP, 0.6 W
	Z	28-Leaded Ceramic Chip Carrier, 0.51 W
AD9027	D	28-Lead Ceramic DIP, 0.6 W
	Z	28-Leaded Ceramic Chip Carrier, 0.51 W



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description		
AD9028	Z	68-Leaded Ceramic Chip Carrier	AD9220	RS	28-Lead SSOP, 2.0 mm	AD9630	Q	8-Lead Cerdip		
AD9032	E	68-Leadless Ceramic Chip Carrier	AD9221	R	28 W-Lead SOIC, 2.65 mm	AD9631	N	8-Lead Plastic DIP		
	Z	40-Leaded Flatpack 1.9 × 1.09 × 0.2		ST	48-Lead TQFP, 1.6 mm		R	8N-Lead SOIC, 1.75 mm		
AD9034	D	DH-40A = 40-Lead Bottom		AD9223	R		28 W-Lead SOIC, 2.65 mm	AD9632	R	8N-Lead Plastic DIP
		Brazed Ceramic 2.12 × 0.77 × 0.225		AD9224	RS		28-Lead SSOP, 1.78 mm		N	8-Lead Plastic DIP
		D	DH-40A = 40-Lead Bottom	AD9225	R	28 W-Lead SOIC, 2.65 mm	R		8N-Lead SOIC, 1.75 mm	
AD9038	Z	68-Leaded Ceramic Chip Carrier	AD9232	R	28 W-Lead SOIC, 2.65 mm	AD9660	R	28 W-Lead SOIC, 2.65 mm		
		68-Leadless Ceramic Chip Carrier	AD9240	S	44-Lead Metric QFP, 2.44 mm	AD9661	R	28 W-Lead SOIC, 2.65 mm		
AD9040A	N	28-Lead Plastic DIP, 0.6 W	AD9241	S	44-Lead Metric QFP, 2.44 mm	AD9661A	R	28 W-Lead SOIC, 2.65 mm		
AD9042	R	28 W-Lead SOIC, 2.44 mm	AD9243	S	44-Lead Metric QFP, 2.45 mm	AD9696	H	10-Pin Can TO-100		
	Q	28-Lead Cerdip, 0.6 W	AD9260	S	44-Lead Metric QFP, 2.45 mm	AD9698	Q	8-Lead Cerdip		
	ST	28-Lead Cerdip, 0.6 W	AD9280	RS	28-Lead SSOP, 1.79 mm		N	8-Lead Plastic DIP		
	P	44-Lead TQFP, 1.5 mm	AD9281	RS	28-Lead SSOP, 1.78 mm		Z	8-Leaded Ceramic Gull Wing		
AD9048	Q	Carrier	AD9300	Q	16-Lead Ceramic DIP, 0.3 W		R	8N-Lead SOIC, 1.75 mm		
		28-Lead Cerdip, 0.6 W	AD9307	P	20-Lead Plastic Leaded Chip Carrier	D	16-Lead Plastic DIP, 0.3 W			
		28-Leadless Ceramic Chip Carrier		Q	Carrier	AD9700	D	16N-Lead SOIC, 1.75 mm		
		44 J-Leaded Ceramic Chip Carrier		N	20-Lead Cerdip, 0.3 W	W	22-Lead Cerdip, 0.32W			
28-Lead SSOP, 1.78 mm	R	20W-Lead SOIC, 2.64 mm		Herm	22-Lead Cerdip, 0.32W, Non-Herm					
AD9049	RS	28-Lead SSOP, 1.78 mm	AD9500	Q	24-Lead Ceramic DIP, 0.3 W	E	28-Leadless Ceramic Chip Carrier			
R	28 W-Lead SOIC, 2.65 mm	P		28-Lead Plastic Leaded Chip Carrier	D	22-Lead Cerdip, 0.32 W				
AD9050	RS	28-Lead SSOP, 1.78 mm	AD9501	N	Carrier	AD9701	R	28 W-Lead SOIC, 2.65 mm		
AD9051	R	28 W-Lead SOIC, 2.65 mm			20-Lead Plastic DIP, 0.3 W	AD9708	R	22-Lead Cerdip, 0.3 W		
AD9054	ST	44-Lead SSOP, 1.78 mm			20-Lead Plastic Leaded Chip Carrier	AD9710	Q	22-Lead Cerdip, 0.3 W		
AD9057	RS	44-Lead TQFP, 1.5 mm			Carrier	AD9712B	Q	22-Lead Cerdip, 0.3 W		
AD9058	J	20-Lead SSOP, 1.79 mm	AD9561A	R	28 W-Lead SOIC, 2.65 mm	N	28-Lead Plastic DIP, 0.6 W			
AD9059	D	44 J-Leaded Ceramic Chip Carrier	AD9562	P	44-Lead Plastic Leaded Chip Carrier	P	28-Lead Plastic Leaded Chip Carrier			
	RS	48-Lead Ceramic DIP, 0.6 W	AD9610	H	Carrier	AD9713B	Q	22-Lead Cerdip, 0.3 W		
AD9060	Z	20-Lead SSOP, 1.79 mm			12-Pin Can TO-12	N	28-Lead Plastic DIP, 0.6 W			
AD9066	E	68-Leaded Ceramic Chip Carrier			AD9611	H	12-Pin Can TO-12	P	28-Lead Plastic Leaded Chip Carrier	
	R	68-Leadless Ceramic Chip Carrier			AD9617	Q	8-Lead Cerdip	AD9720	Q	28-Lead Cerdip, 0.6 W
AD9070	R	28 W-Lead SOIC, 2.65 mm	AD9618	N	8-Lead Plastic DIP	N	28-Lead Plastic DIP, 0.6 W			
AD9071	R	28 W-Lead SOIC, 2.65 mm		Z	8-Leaded Ceramic Gull Wing	E	28-Leadless Ceramic Chip Carrier			
AD9100	D	28 W-Lead SOIC, 2.65 mm		R	8N-Lead SOIC, 1.75 mm	R	28 W-Lead SOIC, 2.65 mm			
AD9101	E	20-Lead Ceramic DIP, 0.3 W		Q	8-Lead Cerdip	Q	28-Lead Cerdip, 0.6 W			
	E	20-Leadless Ceramic Chip Carrier	N	8-Lead Plastic DIP	N	28-Lead Plastic DIP, 0.6 W				
AD9200	R	20W-Lead SOIC, 2.65 mm	AD9620	R	8N-Lead SOIC, 1.75 mm	E	28-Leadless Ceramic Chip Carrier			
	RS	28-Lead SSOP, 1.78 mm		Q	8-Lead Cerdip	R	28 W-Lead SOIC, 2.65 mm			
AD9201	ST	48-Lead TQFP, 1.6 mm		AD9721	N	8-Lead Plastic DIP	RS	28-Lead SSOP, 1.78 mm		
	RS	28-Lead SSOP, 1.78 mm			R	8N-Lead SOIC, 1.75 mm	R	28 W-Lead SOIC, 2.65 mm		



# PACKAGE OPTIONS

Model	Suffix	Package Description
AD9732	R	28 W-Lead SOIC, 2.65 mm
AD9760	R	28 W-Lead SOIC, 2.65 mm
AD9761	RS	28-Lead SSOP, 1.79 mm
AD9762	RS	28-Lead SSOP, 1.79 mm
AD9764	R	28 W-Lead SOIC, 2.65 mm
AD9768	D	18-Lead Ceramic DIP, 0.3 W
	Q	18-Lead Ceramic DIP, 0.3 W
AD9774	ST	44-Lead Metric TQFP, 1.66 mm
AD9778	R	28 W-Lead SOIC, 2.65 mm
AD9801	ST	48-Lead TQFP, 1.5 mm
AD9802	ST	48-Lead TQFP, 1.5 mm
AD9805	S	64-Lead PQFP
AD9807	S	64-Lead PQFP
AD9830	ST	48-Lead TQFP, 1.6 mm
AD9831	ST	48-Lead TQFP, 1.6 mm
AD9832	RU	16-Lead TSSOP, 1.1 mm
AD9833	R	8N-Lead SOIC, 1.75 mm
AD9850	RS	28-Lead SSOP, 1.75 mm
AD9853	R	28 W-Lead SOIC, 2.65 mm
AD9901	Q	20-Lead Cerdip, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD10242	Z	68-Leaded Ceramic Chip Carrier
AD14060	F	308 CQFP (1.7 mm, 52 mm 25 Mil Pitch)
AD14060L	F	308 CQFP (1.7 mm, 52 mm 25 Mil Pitch)
AD14160	B	452 CBGA (Ceramic Ball Grid Array)
AD14160L	B	452 CBGA (Ceramic Ball Grid Array)
AD22001	N	20-Lead Plastic DIP, 0.3 W
AD22050	N	8-Lead Plastic DIP
AD22055	R	8N-Lead SOIC, 1.75 mm
AD22057	R	8N-Lead SOIC, 1.75 mm
AD22100	T	3-Lead Plastic TO-92
	R	8N-Lead SOIC, 1.75 mm
AD22103	T	3-Lead Plastic TO-92
	R	8N-Lead SOIC, 1.75 mm
AD22105	R	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
AD22151	R	8N-Lead SOIC, 1.75 mm
AD53040	RP	20W PSOP 2.65 mm
AD53041	RP	20W PSOP 2.65 mm
AD75062	Q	18-Lead Ceramic DIP, 0.3 W
AD75068	P	44-Lead Plastic Leaded Chip Carrier
AD75069	P	44-Lead Plastic Leaded Chip Carrier
AD73311	RS	20-Lead SSOP, 1.78 mm
AD73322	R	20N-Lead SOIC, 1.78 mm
AD75004	N	28 W-Lead SOIC, 2.65 mm
	P	24-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
AD75019	P	44-Lead Plastic Leaded Chip Carrier
AD75090	P	44-Lead Plastic Leaded Chip Carrier
AD96685	H	10-Pin Can TO-100
	Q	16-Lead Ceramic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD96687	H	10-Pin Can TO-100
	Q	16-Lead Ceramic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD976050	R	28 W-Lead SOIC, 2.65 mm
AD1B60	J	44-Leaded Ceramic Chip Carrier
AD2S44	S	64-Lead PQFP
	M	32-Lead Metal Platform (1.75 × 1.105 × 0.225)
AD2S80A	D	40-Lead Ceramic 0.6 W
AD2S81A	E	44-Leadless Ceramic Chip Carrier
AD2S82A	N	28-Lead Plastic DIP, 0.6 W
	E	44-Leadless Ceramic Chip Carrier

Model	Suffix	Package Description
AD2S83	P	44-Lead Plastic Leaded Chip Carrier
AD2S90	P	20-Lead Plastic Leaded Chip Carrier
AD2S93	P	28-Lead Plastic Leaded Chip Carrier
AD2S99	Q	16-Lead Ceramic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
AD2S100	P	44-Lead Plastic Leaded Chip Carrier
AD2S105	P	44-Lead Plastic Leaded Chip Carrier
	P	44-Lead Plastic Leaded Chip Carrier
AD2S110	P	44-Lead Plastic Leaded Chip Carrier
ADC71	D	DH-32E 1.Bottom Brazed Ceramic, 75 × 1.1 × 0.225
ADC72	D	DH-32E 1.Bottom Brazed Ceramic, 75 × 1.1 × 0.225
ADC170	N	8-Lead Plastic DIP
ADC912A	Q	24-Lead Cerdip, 0.3 W
ADC912A	P	24-Lead Plastic DIP, 0.3 W
ADC912A	R	24W-Lead SOIC, 2.65 mm
ADC1140		32-Lead Module
ADDAC80	D	24-Lead Ceramic DIP, 0.6 W
ADDAC80	DH	24-Lead Ceramic Hybrid 0.6 W
ADDAC80	N	24-Lead Plastic DIP, 0.6 W
ADDC02803SC		
ADDC02805SA	V	17-Lead Custom Power Hybrid
ADDC02808PB	V	17-Lead Custom Power Hybrid
ADDC02812DA	V	17-Lead Custom Power Hybrid
ADDC02815DA	V	17-Lead Custom Power Hybrid



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
ADDC02828SA			ADG313	R	16N-Lead SOIC, 1.75 mm	ADG431	Q	16-Lead Ceramic DIP, 0.3 W
ADDC27005 V	V	17-Lead Custom Power Hybrid	ADG314	R	16N-Lead SOIC, 1.75 mm		N	16-Lead Plastic DIP, 0.3 W
ADDC27008 V	V	17-Lead Custom Power Hybrid	ADG333A	N	20-Lead Plastic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
ADEL2020	R	20W-Lead SOIC, 2.65 mm		RS	20-Lead SSOP, 1.78 mm	ADG432	Q	16-Lead Ceramic DIP, 0.3 W
	N	8-Lead Plastic DIP		R	20N-Lead SOIC, 1.78 mm		N	16-Lead Plastic DIP, 0.3 W
ADG201A	Q	16-Lead Ceramic DIP, 0.3 W	ADG406A	N	20N-Lead SOIC, 1.78 mm		R	16N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.3 W		P	28-Lead Plastic DIP, 0.6 W	ADG433	Q	16-Lead Ceramic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm			28-Lead Plastic Leaded Chip Carrier		N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier	ADG407A	N	28-Lead Plastic DIP, 0.6 W		R	16N-Lead SOIC, 1.75 mm
	P	20-Lead Plastic Leaded Chip Carrier		P	28-Lead Plastic Leaded Chip Carrier	ADG436	N	16-Lead Plastic DIP, 0.3 W
							R	16N-Lead SOIC, 1.75 mm
ADG201HS	Q	Carrier	ADG408	Q	16-Lead Ceramic DIP, 0.3 W	ADG438F	N	16-Lead Plastic DIP, 0.3 W
	N	14-Lead Cerdip, 0.3 W		N	16-Lead Plastic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
	R	16N-Lead SOIC, 1.75 mm		R	16N-Lead SOIC, 1.75 mm	ADG439F	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier	ADG409	Q	16-Lead Ceramic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
ADG202A	Q	16-Lead Ceramic DIP, 0.3 W		N	16-Lead Plastic DIP, 0.3 W	ADG441	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm		N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm	ADG411	Q	16-Lead Ceramic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier		N	16-Lead Plastic DIP, 0.3 W	ADG442	Q	16-Lead Ceramic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier		R	16N-Lead SOIC, 1.75 mm		N	16-Lead Plastic DIP, 0.3 W
ADG211A	R	16N-Lead SOIC, 1.75 mm	ADG412	Q	16-Lead Ceramic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
	N	18-Lead Plastic DIP, 0.3 W		N	16-Lead Plastic DIP, 0.3 W	ADG444	Q	16-Lead Ceramic DIP, 0.3 W
	P	20-Lead Plastic Leaded Chip Carrier	ADG413	Q	16N-Lead SOIC, 1.75 mm		N	16-Lead Plastic DIP, 0.3 W
				R	16-Lead Ceramic DIP, 0.3 W		R	16N-Lead SOIC, 1.75 mm
ADG212A	R	16N-Lead SOIC, 1.75 mm		N	16-Lead Plastic DIP, 0.3 W	ADG451	N	16-Lead Plastic DIP, 0.28 W
	N	18-Lead Plastic DIP, 0.3 W	ADG417	Q	16N-Lead SOIC, 1.75 mm		R	16N-Lead SOIC, 1.75 mm
	P	20-Lead Plastic Leaded Chip Carrier		R	8-Lead Cerdip	ADG452	N	16-Lead Plastic DIP, 0.28 W
					8-Lead Plastic DIP		R	16N-Lead SOIC, 1.75 mm
ADG221	Q	16-Lead Ceramic DIP, 0.3 W	ADG419	Q	8N-Lead SOIC, 1.75 mm	ADG453	N	14-Lead Plastic DIP, 0.28 W
	R	16N-Lead SOIC, 1.75 mm		N	8-Lead Cerdip		R	16N-Lead SOIC, 1.75 mm
	N	18-Lead Plastic DIP, 0.3 W		R	8-Lead Plastic DIP	ADG465	RT	6-Lead SOT-23, 1.45 mm
	E	20-Leadless Ceramic Chip Carrier	ADG426	N	8N-Lead SOIC, 1.75 mm	ADG466	N	8-Lead Plastic DIP
	P	20-Lead Plastic Leaded Chip Carrier	ADG428	RS	28-Lead SSOP, 1.78 mm		RM	8-Lead $\mu$ SOIC, 25 Mil Ctr
				Q	18-Lead Cerdip, 0.3 W			1.09 mm
				N	18-Lead Plastic DIP, 0.3 W		R	8N-Lead SOIC, 1.75 mm
ADG222	Q	16-Lead Ceramic DIP, 0.3 W		P	20-Lead Plastic Leaded Chip Carrier	ADG467	R	16 W-Lead SOIC, 2.44 mm
	R	16N-Lead SOIC, 1.75 mm					RS	20-Lead SSOP, 1.78 mm
	N	18-Lead Plastic DIP, 0.3 W	ADG429	Q	18-Lead Cerdip, 0.3 W	ADG506A	Q	28-Lead Cerdip, 0.6 W
	E	20-Leadless Ceramic Chip Carrier		N	18-Lead Plastic DIP, 0.3 W		N	28-Lead Plastic DIP, 0.6 W
	P	20-Lead Plastic Leaded Chip Carrier		P	20-Lead Plastic Leaded Chip Carrier		E	28-Leadless Ceramic Chip Carrier
							P	28-Lead Plastic Leaded Chip Carrier
ADG312	R	16N-Lead SOIC, 1.75 mm					R	28 W-Lead SOIC, 2.44 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
ADG507A	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
ADG508A	R	28 W-Lead SOIC, 2.65 mm
	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier
ADG508F	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	RN	16N-Lead SOIC, 1.75 mm
ADG509A	RW	16 W SOIC, 2.65 mm
	E	20-Leadless Ceramic Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
ADG509F	R	16N-Lead SOIC, 1.75 mm
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Ceramic DIP, 0.3 W
ADG511	N	16-Lead Plastic DIP, 0.3 W
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
	Q	16-Lead Ceramic DIP, 0.3 W
ADG512	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
ADG513	R	16N-Lead SOIC, 1.75 mm
	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
ADG526A	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
	R	28 W-Lead SOIC, 2.44 mm

Model	Suffix	Package Description
ADG527A	Q	28-Lead Cerdip, 0.6 W
	N	28-Lead Plastic DIP, 0.6 W
	E	28-Leadless Ceramic Chip Carrier
	P	28-Lead Plastic Leaded Chip Carrier
ADG528A	R	28 W-Lead SOIC, 2.44 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADG528F	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADG529A	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADG608	P	20-Lead Plastic Leaded Chip Carrier
	Q	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
ADG609	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
	RT	8-Lead SOT-23, 1.45 mm
ADG701	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RT	6-Lead SOT-23, 1.45 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RT	6-Lead SOT-23, 1.45 mm
ADG702	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RT	6-Lead SOT-23, 1.45 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RT	6-Lead SOT-23, 1.45 mm
ADG774	RQ	16N-Lead QSOP
	R	16N-Lead SOIC, 1.75 mm
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
ADM202	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
	P	20-Lead Plastic Leaded Chip Carrier
ADM207	R	28 W-Lead SOIC, 2.44 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM208	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM208E	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM209	R	28 W-Lead SOIC, 2.44 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM209E	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM211	R	28 W-Lead SOIC, 2.44 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM211E	P	20-Lead Plastic Leaded Chip Carrier
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier
ADM213	R	28 W-Lead SOIC, 2.65 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	E	20-Leadless Ceramic Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description
ADM213E	RS	28-Lead SSOP, 2.0 mm
	RU	28-Lead TSSOP, 1.1 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM222	N	16-Lead Plastic DIP, 0.3 W
	R	16 W-Lead SOIC, 2.44 mm
ADM223	RS	28-Lead SSOP, 2.0 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM230L	Q	20-Lead Cerdip, 0.3 W
	N	20-Lead Plastic DIP, 0.3 W
	RW	20W-Lead SOIC, 2.44 mm
ADM231L	Q	14-Lead Cerdip, 0.3 W
	N	14-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM232A	N	16-Lead Plastic DIP, 0.3 W
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
ADM232L	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM233L	N	20-Lead Plastic DIP, 0.3 W
ADM234L	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	RW	16 W SOIC, 2.65 mm
ADM235L	D	24-Lead Ceramic DIP, 0.6 W
	N	24-Lead Plastic DIP, 0.3 W
	N	24-Lead Plastic DIP, 0.6 W
ADM236L	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	RW	24W-Lead SOIC, 2.45 mm
ADM237L	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	RW	24W-Lead SOIC, 2.45 mm
ADM238L	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	RW	24W-Lead SOIC, 2.45 mm
ADM239L	Q	24-Lead Cerdip, 0.3 W
	N	24-Lead Plastic DIP, 0.3 W
	RW	24W-Lead SOIC, 2.45 mm
ADM241L	RS	28-Lead SSOP, 1.78 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM242	R	16 W-Lead SOIC, 2.44 mm
	N	18-Lead Plastic DIP, 0.3 W

Model	Suffix	Package Description
ADM483E	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM485	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM488	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM489	N	16-Lead Plastic DIP
	RU	16-Lead TSSOP, 1.1 mm
ADM489	R	16N-Lead SOIC, 1.75 mm
	RU	8-Lead TSSOP, 1.1 mm
ADM491E	N	8-Lead Plastic DIP
ADM560	RS	28-Lead SSOP, 2.0 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM561	RS	28-Lead SSOP, 2.0 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM660	N	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.1 mm
	R	8N-Lead SOIC, 1.75 mm
ADM663	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM663A	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM666	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM666A	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM690	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
ADM690A	N	8-Lead Plastic DIP
	RN	8-Lead SOIC, 1.75 mm
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
ADM691	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM691A	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
ADM692	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP

Model	Suffix	Package Description
ADM692A	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM693	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM693A	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16 W SOIC, 2.65 mm
ADM694	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
ADM694A	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
ADM695	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM695A	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM696	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM696A	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM697	Q	16-Lead Ceramic DIP, 0.3 W
	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM697A	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
ADM698	R	16 W SOIC, 2.65 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
ADM698A	R	16 W SOIC, 2.65 mm
	Q	8-Lead Cerdip
	N	8-Lead Plastic DIP
ADM699	R	16 W SOIC, 2.65 mm
	N	8-Lead Plastic DIP
ADM699A	R	16 W SOIC, 2.65 mm
	N	8-Lead Plastic DIP
ADM705	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM706	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
ADM706P	R	8N-Lead SOIC, 1.75 mm
ADM706R	R	8N-Lead SOIC, 1.75 mm
ADM706S	R	8N-Lead SOIC, 1.75 mm
ADM706T	R	8N-Lead SOIC, 1.75 mm
ADM707	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
ADM708	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
ADM708R	R	8N-Lead SOIC, 1.75 mm
ADM708S	R	8N-Lead SOIC, 1.75 mm
ADM708T	R	8N-Lead SOIC, 1.75 mm
ADM709	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	R	8N-Lead SOIC, 1.75 mm
ADM709L	R	8N-Lead SOIC, 1.75 mm
ADM709M	R	8N-Lead SOIC, 1.75 mm
ADM709R	R	8N-Lead SOIC, 1.75 mm
ADM709S	R	8N-Lead SOIC, 1.75 mm
ADM709T	R	8N-Lead SOIC, 1.75 mm
ADM800	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
ADM802	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM805	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADM809	RT	3-Lead SOT-23, 1.12 mm
ADM810	RT	3-Lead SOT-23, 1.12 mm
ADM811	RT	4-Lead SOT-143 1.195 mm
ADM812	RT	4-Lead SOT-143 1.195 mm
ADM1181	N	16-Lead Plastic DIP, 0.3 W
	R	16 W SOIC, 2.65 mm
	RW	16 W SOIC, 2.65 mm
ADM1232	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RN	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
ADM8690	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RN	8N-Lead SOIC, 1.75 mm
ADM8691	RU	16-Lead TSSOP, 1 mm
	RN	16N-Lead SOIC, 1.75 mm
	RW	16 W SOIC, 2.65 mm
	N	18-Lead Plastic DIP, 0.3 W
ADM8692	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RN	8N-Lead SOIC, 1.75 mm
	RU	16-Lead TSSOP, 1 mm
	RW	16 W SOIC, 2.65 mm
	N	18-Lead Plastic DIP, 0.3 W
ADM8694	N	8-Lead Plastic DIP
	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RN	8N-Lead SOIC, 1.75 mm
ADM8696	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1 mm
	RW	16 W SOIC, 2.65 mm
ADM8697	N	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1 mm
	RW	16 W SOIC, 2.65 mm
	RN	8N-Lead SOIC, 1.75 mm
ADM8698	RN	8N-Lead SOIC, 1.75 mm
ADM8699	RN	8N-Lead SOIC, 1.75 mm
ADM9240	RU	24-Lead TSSOP, 1.1 mm
ADM9261	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm
	RN	16N-Lead SOIC, 1.75 mm
ADM9264	RN	16N-Lead SOIC, 1.75 mm
ADM9268	RN	16N-Lead SOIC, 1.75 mm
ADM9690	R	8N-Lead SOIC, 2.59 mm
ADMC200	P	68-Lead Plastic Leaded Chip Carrier
ADMC201	P	68-Lead Plastic Leaded Chip Carrier
ADMC205	P	68-Lead Plastic Leaded Chip Carrier
ADMC330	P	68-Lead Plastic Leaded Chip Carrier
ADMC330	ST	80-Lead TQFP
	N	28-Lead SSOP, 1.78 mm
	RS	20-Lead SSOP, 1.78 mm
ADM14185E R	RS	20-Lead SSOP, 1.78 mm
ADM14196E R	RS	20W-Lead SOIC, 2.65 mm
ADM1485	Q	20W-Lead SOIC, 2.65 mm
	N	8-Lead Cerdip
	R	8-Lead Plastic DIP
ADM3202	N	8N-Lead SOIC, 1.75 mm
	N	16-Lead Plastic DIP, 0.28 W
	RU	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1.1 mm
	RN	16N-Lead SOIC, 1.75 mm
	RN	16N-Lead SOIC, 1.75 mm
	R	16 W-Lead SOIC, 2.44 mm
	RW	16 W SOIC, 2.65 mm
ADM3213E	RS	28-Lead SSOP, 1.78 mm
	RW	28 W-Lead SOIC, 2.44 mm
	R	28 W-Lead SOIC, 2.65 mm
ADM3222	R	16 W-Lead SOIC, 2.44 mm
	R	16 W-Lead SOIC, 2.44 mm
	N	18-Lead Plastic DIP, 0.28 W
	N	18-Lead Plastic DIP, 0.3 W
	RU	18-Lead TSSOP, 1.1 mm
	RS	20-Lead SSOP, 1.78 mm
	RS	20-Lead SSOP, 1.78 mm
	RU	20-Lead TSSOP, 1.1 mm
ADM3311E	RU	28-Lead TSSOP, 1.1 mm
	R	28 W-Lead SOIC, 2.44 mm
ADM3491	N	14-Lead Plastic DIP, 0.28 W
	RU	16-Lead TSSOP, 1.1 mm
	R	16N-Lead SOIC, 1.75 mm
ADM5104	ST	80-Lead TQFP
ADM5170	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
ADM5180	N	28-Lead Plastic DIP, 0.6 W
	P	28-Lead Plastic Leaded Chip Carrier
ADM6315	RT	4-Lead SOT-143 1.195 mm
ADM8660	N	8-Lead Plastic DIP
	RN	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
ADP667	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1073	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1108	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1109	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1109A	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1110	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1111	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1147	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP1148	N	14-Lead Plastic DIP, 0.3 W
	R	16N-Lead SOIC, 1.75 mm
ADP1149	R	16 W SOIC, 2.65 mm
ADP1173	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP3000	P	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP3050	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
ADP3148	R	14N-Lead SOIC, 1.75 mm
ADP3152	R	16N-Lead SOIC, 1.75 mm
ADP3153	R	16 W-Lead SOIC, 2.44 mm
ADP3300	RT	6-Lead SOT-23, 1.45 mm
ADP3301	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3302	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3303	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3304	R	8N-Lead SOIC, 1.75 mm
ADP3306	RU	14-Lead TSSOP, 1.1 mm
	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3307	RT	6-Lead SOT-23, 1.12 mm
ADP3308	RT	5-Lead SOT-23, 1.12 mm
ADP3309	RT	5-Lead SOT-23, 1.12 mm

Model	Suffix	Package Description
ADP3310	RT	6-Lead SOT-23, 1.45 mm
ADP3311	RT	8N-Lead SOIC, 1.75 mm
ADP3312	R	3-Lead SOT-23, 1.12 mm
	RT	8N-Lead SOIC, 1.75 mm
ADP3319	R	3-Lead SOT-23, 1.12 mm
	RT	8N-Lead SOIC, 1.75 mm
ADP3325	R	6-Lead SOT-23, 1.45 mm
	RT	8N-Lead SOIC, 1.75 mm
	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3603	R	8N-Lead SOIC, 1.75 mm
ADP3604	R	8N-Lead SOIC, 1.75 mm
ADP3605	R	8N-Lead SOIC, 1.75 mm
ADP3606	RU	14-Lead TSSOP, 1.1 mm
	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3607	R	8N-Lead SOIC, 1.75 mm
ADP3667	N	8-Lead Plastic DIP
	R	8N-Lead SOIC (Thermal Coast Line) 1.7 mm
ADP3800	R	16N-Lead SOIC, 1.75 mm
ADP3801	R	16N-Lead SOIC, 1.75 mm
ADP3802	R	16N-Lead SOIC, 1.75 mm
ADP3810	R	8N-Lead SOIC, 1.75 mm
ADP3811	R	8N-Lead SOIC, 1.75 mm
ADP3820	RT	6-Lead SOT-23, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
ADR290	T9	3-Lead Plastic TO-92
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
ADR291	T9	3-Lead Plastic TO-92
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
ADR292	T9	3-Lead Plastic TO-92
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
ADR293	T9	3-Lead Plastic TO-92
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
ADRS120	S	8N-Lead SOIC, 1.75 mm
ADSP-21csp01	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
	S	160-Lead PQFP

Model	Suffix	Package Description
ADSP-21mod870	ST	100-Lead Metric TQFP, 1.6 mm
ADSP-21msp50A	G	100-Lead-Pin Grid Array
ADSP-21msp50A	S	100-Lead PQFP
ADSP-21msp55A	G	100-Lead-Pin Grid Array
	S	100-Lead PQFP
ADSP-21msp56A	G	100-Lead-Pin Grid Array
	S	100-Lead PQFP
ADSP-21msp58	ST	100-Lead Metric TQFP, 1.6 mm
ADSP-21msp59	ST	100-Lead Metric TQFP, 1.6 mm
ADSP-2100 G		100-Lead-Pin Grid Array
ADSP-2101 G	P	68-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
ADSP-2103 P		68-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
ADSP-2104 P		68-Lead Plastic Leaded Chip Carrier
	P	68-Lead Plastic Leaded Chip Carrier
ADSP-2105 P		68-Lead Plastic Leaded Chip Carrier
ADSP-2109 P		68-Lead Plastic Leaded Chip Carrier
ADSP-2111 G	G	100-Lead-Pin Grid Array
	S	100-Lead PQFP Bumped 4.57 mm
ADSP-2115 ST	ST	100-Lead Metric TQFP, 1.6 mm
	P	68-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
ADSP-2161 P		68-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
ADSP-2162 P		68-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
ADSP-2163	P	68-Lead Plastic Leaded Chip Carrier	ADSP-21062	B	225-Lead Plastic Ball Grid PBGA	ADV453	N	28-Lead Plastic DIP, 0.6 W
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm		S	240-Lead Metric Thermally Enhanced PQFP		Q	40-Lead Cerdip, 0.6 W
ADSP-2164	P	68-Lead Plastic Leaded Chip Carrier		ST	240-Lead Metric Thermally Enhanced PQFP		E	44-Lead Ceramic Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm		Z	240 Thermally Enhanced CQFP (Heat Slug Up)		P	44-Lead Plastic Leaded Chip Carrier
ADSP-2165	P	68-Lead Plastic Leaded Chip Carrier		RT	5-Lead SOT-23, 1.0 mm	ADV458	P	84-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm	ADT05	P	8-Lead Plastic DIP		P	Carrier
ADSP-2166	P	68-Lead Plastic Leaded Chip Carrier	ADT10	RU	8-Lead TSSOP, 1.0 mm	ADV471	P	44-Lead Plastic Leaded Chip Carrier
	S	80 PQFP, 14.1 × 14.1 × 2.45 mm		R	8N-Lead SOIC, 1.75 mm	ADV473	P	44-Lead Plastic Leaded Chip Carrier
ADSP-2171	ST	128-Lead 1.6 mm Metric TQFP	ADT11	P	8-Lead Plastic DIP	ADV476	N	28-Lead Plastic DIP, 0.6 W
	S	128-Lead PQFP 4.07 mm		RU	8N-Lead TSSOP, 1.0 mm		P	44-Lead Plastic Leaded Chip Carrier
ADSP-2173	ST	128-Lead 1.6 mm Metric TQFP		R	8N-Lead SOIC, 1.75 mm	ADV478	P	44-Lead Plastic Leaded Chip Carrier
	S	128-Lead PQFP 4.07 mm	ADT14	N	16-Lead Plastic DIP, 0.3 W		S	160-Lead PQFP
ADSP-2181	ST	128-Lead 1.6 mm Metric TQFP		R	16 N SOIC, 1.75 mm	ADV601	ST	120-Lead TQFP
	S	128-Lead PQFP 4.07 mm	ADT18	T9	3-Lead Plastic TO-92	ADV701	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
ADSP-2182	ST	128-Lead 1.6 mm Metric TQFP		RT	5-Lead SOT-23, 1.0 mm	ADV702	S	80 PQFP, 14.1 × 14.1 × 2.45 mm
	S	128-Lead PQFP 4.07 mm	ADT19	T9	3-Lead Plastic TO-92	ADV7120	N	40-Lead Plastic DIP, 0.54W
ADSP-2183	ST	128-Lead 1.6 mm Metric TQFP		RT	5-Lead SOT-23, 1.0 mm		P	44-Lead Plastic Leaded Chip Carrier
	S	128-Lead PQFP 4.07 mm	ADT20	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm		ST	48-Lead TQFP, 1.5 mm
ADSP-2185	ST	100-Lead Metric TQFP, 1.6 mm		R	8N-Lead SOIC, 1.75 mm	ADV7121	N	40-Lead Plastic DIP, 0.54W
ADSP-2186	ST	100-Lead Metric TQFP, 1.6 mm	ADT21	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm		P	44-Lead Plastic Leaded Chip Carrier
ADSP-2187	ST	100-Lead Metric TQFP, 1.6 mm		R	8N-Lead SOIC, 1.75 mm	ADV7122	P	44-Lead Plastic Leaded Chip Carrier
ADSP-21020	G	223-Lead-Pin Grid Array	ADT22	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm		ST	48-Lead TQFP, 1.5 mm
ADSP-21060	ST	240-Lead Metric Thermally Enhanced PQFP		R	8N-Lead SOIC, 1.75 mm	ADV7123	ST	48-Lead TQFP, 1.5 mm
	W	240 Thermally Enhanced CQFP (Heat Slug Down)	ADT30	RU	8-Lead TSSOP, 1.0 mm	ADV7124	ST	48-Lead TQFP, 1.5 mm
	Z	240 Thermally Enhanced CQFP (Heat Slug Up)		RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm	ADV7127	RU	24-Lead TSSOP, 1.1 mm
ADSP-21061	ST	240-Lead Metric Thermally Enhanced PQFP	ADT45	RT	3-Lead SOT-23, 1.0 mm		R	28 W-Lead SOIC, 2.65 mm
			ADT50	RT	3-Lead SOT-23, 1.0 mm	ADV7128	R	28 W-Lead SOIC, 2.44 mm
			ADT70	N	20-Lead Plastic DIP, 0.28 W	ADV7129	S	304-Lead PQFP 4.23mm
				R	20W-Lead SOIC, 2.65 mm	ADV7141	N	28-Lead Plastic DIP, 0.6 W
			ADV101	P	44-Lead Plastic Leaded Chip Carrier		P	44-Lead Plastic Leaded Chip Carrier
						ADV7146	N	28-Lead Plastic DIP, 0.6 W
							P	44-Lead Plastic Leaded Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description
ADV7148	N	28-Lead Plastic DIP, 0.6 W
	P	44-Lead Plastic Leaded Chip Carrier
ADV7150	S	160-Lead Metric Thermally Enhanced PQFP
ADV7151	S	100-Lead PQFP 3.4 mm
ADV7152	S	100-Lead Metric Thermally Enhanced PQFP 3.4 mm
ADV7160	S	160-Lead PQFP
ADV7162	S	160-Lead PQFP
ADV7170		TBD
ADV7171		TBD
ADV7174	S	44-Lead PQFP Thermally Enhanced
ADV7175	S	44-Lead PQFP Thermally Enhanced
ADV7175A	S	44-Lead PQFP Thermally Enhanced
ADV7176A	S	44-Lead PQFP Thermally Enhanced
ADV7177	S	44-Lead PQFP Thermally Enhanced
ADV7178	S	44-Lead PQFP Thermally Enhanced
ADV7185	ST	80-Lead TQFP
ADVFC32	H	10-Pin Can TO-100
ADVFC32	N	14-Lead Plastic DIP
ADXL05	H	10-Pin Can TO-100
ADXL50	H	10-Pin Can TO-100
ADXL150	QC	14-Lead Cerpac (Surface Mount)
ADXL181	H	10-Pin Can TO-100
ADXL202	Q	14-Lead Ceramic DIP
ADXL250	QC	14-Lead Cerpac (Surface Mount)
AMP01	S	16 W-Lead SOIC, 2.64 mm
	X	18-Lead Cerdip, 0.3 W
	S	20W-Lead SOIC, 2.64 mm
	TC	28-Leadless Ceramic Chip Carrier
AMP02	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP

Model	Suffix	Package Description
AMP03	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
AMP04	P	8N-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
AMP05	X	18-Lead Cerdip, 0.3 W
BUF03	J	8-Pin Can TO-99A
BUF04	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
CMP01	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
CMP02	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	S	8N-Lead SOIC, 1.75 mm
CMP04	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	14N-Lead SOIC, 1.75 mm
CMP05	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
CMP08	Z	8-Lead Cerdip
	S	8N-Lead SOIC, 1.75 mm
CMP401	P	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1 mm
	S	16N-Lead SOIC, 1.75 mm
CMP402	P	16-Lead Plastic DIP, 0.3 W
	RU	16-Lead TSSOP, 1 mm
	S	16N-Lead SOIC, 1.75 mm
CMP404	Y	14-Lead Cerdip, 0.3 W
CMP601	N	8-Lead Plastic DIP
	R	8N-Lead SOIC, 1.75 mm
CMP604	N	14-Lead Plastic DIP, 0.3 W
	R	14N-Lead SOIC, 1.75 mm
DAC08	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	S	16N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
DAC10	P	16-Lead Plastic DIP, 0.3 W
	X	18-Lead Cerdip, 0.3 W
	S	18W-Lead SOIC, 2.65 mm

Model	Suffix	Package Description
DAC16	P	24-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm
DAC85	N	24-Lead Plastic DIP, 0.6 W
	D	DH24A, 24-Lead Ceramic 0.6 W
DAC87	N	24-Lead Plastic DIP, 0.6 W
	D	DH24A, 24-Lead Ceramic 0.6 W
DAC100	Q	16-Lead Ceramic DIP, 0.3 W
DAC210	X	18-Lead Ceramic DIP, 0.3 W
DAC312	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
DAC312	S	20W-Lead SOIC, 2.64 mm
DAC888	N	20-Lead Plastic DIP, 0.3 W
DAC1408A	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	S	16N-Lead SOIC, 1.75 mm
DAC8043	S	16N-Lead SOIC, 2.65 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
DAC8043A	RU	8-Lead TSSOP, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
DAC8143	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm
DAC8221	W	24-Lead Cerdip, 0.3 W
	P	24-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm
	TC	28-Leadless Ceramic Chip Carrier
DAC8222	W	24-Lead Cerdip, 0.3 W
	P	24-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm
	TC	28-Leadless Ceramic Chip Carrier
DAC8228	P	20-Lead Plastic DIP, 0.3 W
	S	20W-Lead SOIC, 2.64 mm
DAC8229	P	20-Lead Plastic DIP, 0.3 W
	S	20W-Lead SOIC, 2.64 mm
DAC8248	W	24-Lead Cerdip, 0.3 W
	P	24-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description	Model	Suffix	Package Description	Model	Suffix	Package Description
DAC8408	T	28-Lead Cerdip, 0.6 W	MLT04	P	16-Lead Plastic DIP, 0.3 W	OP16	Z	8-Lead Cerdip
	P	28-Lead Plastic DIP, 0.6 W		S	18W-Lead SOIC, 2.65 mm		P	8-Lead Plastic DIP
	TC	28-Leadless Ceramic Chip Carrier	MUX08	Q	16-Lead Ceramic DIP, 0.3 W		J	8-Pin Can TO-99A
	PC	28-Lead Plastic Leaded Chip Carrier		P	16-Lead Plastic DIP, 0.3 W	OP17	S	8N-Lead SOIC, 1.75 mm
	S	28 W-Lead SOIC, 2.65 mm		RC	20-Lead Plastic Leaded Chip Carrier		Z	8-Lead Cerdip
DAC8412	T	28-Lead Cerdip, 0.6 W	MUX16	T	28-Lead Cerdip, 0.6 W	OP20	J	8-Pin Can TO-99A
	P	28-Lead Plastic DIP, 0.6 W		P	28-Lead Plastic DIP, 0.6 W		Z	8-Lead Cerdip
	TC	28-Leadless Ceramic Chip Carrier		TC	28-Leadless Ceramic Chip Carrier		P	8-Lead Plastic DIP
	PC	28-Lead Plastic Leaded Chip Carrier		PC	28-Lead Plastic Leaded Chip Carrier	OP21	J	8-Pin Can TO-99A
	S	28 W-Lead SOIC, 2.65 mm		Q	16-Lead Ceramic DIP, 0.3 W		S	8N-Lead SOIC, 1.75 mm
DAC8413	T	28-Lead Cerdip, 0.6 W	MUX24	P	16-Lead Plastic DIP, 0.3 W		Z	8-Lead Cerdip
	P	28-Lead Plastic DIP, 0.6 W		S	16N-Lead SOIC, 1.75 mm	OP22	P	8-Lead Plastic DIP
	TC	28-Leadless Ceramic Chip Carrier		T	28-Lead Cerdip, 0.6 W		J	8-Pin Can TO-99A
	PC	28-Lead Plastic Leaded Chip Carrier	MUX28	P	28-Lead Plastic DIP, 0.6 W		S	8N-Lead SOIC, 1.75 mm
	Q	16-Lead Ceramic DIP, 0.3 W		PC	28-Lead Plastic Leaded Chip Carrier	OP27	RC	20-Leadless Ceramic Chip Carrier
DAC8420	P	16-Lead Plastic DIP, 0.3 W		Z	8-Lead Cerdip		Z	8-Lead Cerdip
	S	16 W SOIC, 2.65 mm	OP05	P	8-Lead Plastic DIP		P	8-Lead Plastic DIP
DAC8426	R	20-Lead Cerdip, 0.3 W		J	8-Pin Can TO-99A	OP32	J	8-Pin Can TO-99A
	P	20-Lead Plastic DIP, 0.3 W	OP07	RC	20-Leadless Ceramic Chip Carrier		Z	8-Lead Cerdip
	S	20W-Lead SOIC, 2.64 mm		Z	8-Lead Cerdip		P	8-Lead Plastic DIP
DAC8512	Z	8-Lead Cerdip		P	8-Lead Plastic DIP	OP37	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP		J	8-Pin Can TO-99A		Z	8-Lead Cerdip
	S	8N-Lead SOIC, 1.75 mm		S	8N-Lead SOIC, 1.75 mm		P	8-Lead Plastic DIP
DAC8562	P	20-Lead Plastic DIP, 0.3 W	OP10	Y	14-Lead Cerdip, 0.3 W		J	8-Pin Can TO-99A
	S	20W-Lead SOIC, 2.72 mm	OP11	Y	14-Lead Cerdip, 0.3 W	OP41	S	8N-Lead SOIC, 1.75 mm
DAC8800	R	20-Lead Cerdip, 0.3 W		P	14-Lead Plastic DIP, 0.3 W		P	8-Lead Plastic DIP
	P	20-Lead Plastic DIP, 0.3 W		RC	20-Leadless Ceramic Chip Carrier	OP42	J	8-Pin Can TO-99A
	S	20W-Lead SOIC, 2.64 mm	OP12	J	8-Pin Can TO-99A		RC	20-Leadless Ceramic Chip Carrier
DAC8840	P	24-Lead Plastic DIP, 0.3 W	OP14	Z	8-Lead Cerdip		Z	8-Lead Cerdip
	R	24W-Lead SOIC, 2.65 mm		P	8-Lead Plastic DIP		P	8-Lead Plastic DIP
DAC8841	P	24-Lead Plastic DIP, 0.3 W		J	8-Pin Can TO-99A		J	8-Pin Can TO-99A
	R	24W-Lead SOIC, 2.65 mm		S	8N-Lead SOIC, 1.75 mm	OP43	S	8N-Lead SOIC, 1.75 mm
DAC8842	P	24-Lead Plastic DIP, 0.3 W	OP15	Z	8-Lead Cerdip		P	8-Lead Plastic DIP
	S	24W-Lead SOIC, 2.65 mm		Z	8-Lead Cerdip	OP44	J	8-Pin Can TO-99A
MAT01	H	6-Pin Can TO-78		P	8-Lead Plastic DIP		RC	20-Leadless Ceramic Chip Carrier
MAT02	H	6-Pin Can TO-78		J	8-Pin Can TO-99A		Z	8-Lead Cerdip
MAT03	H	6-Pin Can TO-78		J	8-Pin Can TO-99A	OP50	J	8-Pin Can TO-99A
MAT04	Y	14-Lead Cerdip, 0.3 W		J	8-Pin Can TO-99A		Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W		S	8N-Lead SOIC, 1.75 mm	OP61	Z	8-Lead Cerdip
	S	14N-Lead SOIC, 1.75 mm					P	8-Lead Plastic DIP
							S	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
OP64	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
OP77	S	8N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP80	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP90	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
OP97	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
OP113	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
OP147	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP160	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP162	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.0 mm
OP176	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
OP177	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	P	8-Lead Plastic DIP
OP179	S	8N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP181	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP183	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
OP184	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.0 mm
	R	8N-Lead SOIC, 1.75 mm
OP186	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP191	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP193	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP196	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	S	16 W-Lead SOIC, 2.64 mm
	RC	20-Leadless Ceramic Chip Carrier
OP200	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	Y	14-Lead Cerdip, 0.3 W
	Z	8-Lead Cerdip
OP207	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
OP213	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
OP215	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
OP220	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
OP221	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP227	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	RC	20-Leadless Ceramic Chip Carrier
OP249	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	RU	8-Lead TSSOP, 1.1 mm
	S	8N-Lead SOIC, 1.75 mm
OP250	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	P	8-Lead Plastic DIP
OP250	S	8N-Lead SOIC, 1.75 mm
	RT	5-Lead SOT-23, 1.12 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP260	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP271	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
OP275	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP279	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	RU	8-Lead TSSOP, 1.1 mm
	S	8N-Lead SOIC, 1.75 mm
OP281	P	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.1 mm
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
OP282	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP283	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP284	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP285	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP290	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP291	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP292	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP293	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP295	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
OP296	P	8-Lead Plastic DIP
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
	S	8N-Lead SOIC, 1.75 mm



# PACKAGE OPTIONS

Model	Suffix	Package Description
OP297	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
OP400	S	8N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm
	TC	28-Leadless Ceramic Chip Carrier
OP413	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP420	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W-Lead SOIC, 2.64 mm
	RC	20-Leadless Ceramic Chip Carrier
OP421	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP450	RU	14-Lead TSSOP, 1 mm
	S	14N-Lead SOIC, 1.75 mm
OP462	P	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1 mm
OP467	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W-Lead SOIC, 2.64 mm
	RC	20-Leadless Ceramic Chip Carrier
OP470	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP471	S	16 W SOIC, 2.65 mm
	RC	20-Leadless Ceramic Chip Carrier
	TC	28-Leadless Ceramic Chip Carrier
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP481	S	16 W SOIC, 2.65 mm
	RC	20-Leadless Ceramic Chip Carrier
OP482	P	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1.1 mm
OP482	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	14N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier

Model	Suffix	Package Description
OP484	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP490	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm
	TC	28-Leadless Ceramic Chip Carrier
OP491	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
OP492	RU	14-Lead TSSOP, 1.1 mm
	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W-Lead SOIC, 2.64 mm
OP493	S	14N-Lead SOIC, 1.75 mm
	P	14-Lead Plastic DIP, 0.3 W
OP495	S	16 W SOIC, 2.65 mm
	P	14-Lead Plastic DIP, 0.3 W
OP496	S	16 W SOIC, 2.65 mm
	P	14-Lead Plastic DIP, 0.3 W
OP497	RU	14-Lead TSSOP, 1.1 mm
	S	14N-Lead SOIC, 1.75 mm
	Y	14-Lead Cerdip, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm
PKD01	RC	20-Leadless Ceramic Chip Carrier
	Y	14-Lead Cerdip, 0.3 W
PM111	P	14-Lead Plastic DIP, 0.3 W
	Y	14-Lead Cerdip, 0.3 W
PM119	Z	8-Lead Cerdip
	J	8-Pin Can TO-99A
	Y	14-Lead Cerdip, 0.3 W
	Y	14-Lead Cerdip, 0.3 W
	Y	14-Lead Cerdip, 0.3 W
PM139A	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
PM155	J	8-Pin Can TO-99A
	RC	20-Leadless Ceramic Chip Carrier
PM156	Z	8-Lead Cerdip
	J	8-Pin Can TO-99A
PM157	Z	8-Lead Cerdip
	P	14-Lead Plastic DIP, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W
	P	14-Lead Plastic DIP, 0.3 W

Model	Suffix	Package Description
PM356	Z	8-Lead Cerdip
	Z	8-Lead Cerdip
PM1008	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
PM7224	S	8N-Lead SOIC, 1.75 mm
	Q	18-Lead Cerdip, 0.3 W
	N	18-Lead Plastic DIP, 0.3 W
	S	18W-Lead SOIC, 2.65 mm
	PC	20-Lead Plastic Leaded Chip Carrier
PM7226	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	RC	20-Leadless Ceramic Chip Carrier
	PC	20-Lead Plastic Leaded Chip Carrier
PM7228	S	20W-Lead SOIC, 2.64 mm
	P	24-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm
	PC	28-Lead Plastic Leaded Chip Carrier
PM7524	P	16-Lead Plastic DIP, 0.3 W
	S	16N-Lead SOIC, 1.75 mm
	PC	20-Lead Plastic Leaded Chip Carrier
PM7528	S	20W-Lead SOIC, 2.64 mm
	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	S	20W-Lead SOIC, 2.64 mm
PM7533	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	PC	20-Lead Plastic Leaded Chip Carrier
PM7541A	P	16-Lead Plastic DIP, 0.3 W
	X	18-Lead Cerdip, 0.3 W
PM7543	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm
PM7543	PC	20-Lead Plastic Leaded Chip Carrier



# PACKAGE OPTIONS

Model	Suffix	Package Description
PM7545	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	PC	20-Lead Plastic Leaded Chip Carrier
PM7548	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	PC	20-Lead Plastic Leaded Chip Carrier
PM7574	S	20W-Lead SOIC, 2.65 mm
	S	18W-Lead SOIC, 2.65 mm
PM7628	R	20-Lead Cerdip, 0.3 W
	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	PC	20-Lead Plastic Leaded Chip Carrier
PM7645	S	20W-Lead SOIC, 2.64 mm
	S	20W-Lead SOIC, 2.65 mm
	R	20-Lead Cerdip, 0.3 W
	P	20-Lead Plastic DIP, 0.3 W
	RC	20-Leadless Ceramic Chip Carrier
REF01	PC	20-Lead Plastic Leaded Chip Carrier
	S	20W-Lead SOIC, 2.64 mm
	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
REF02	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	RC	20-Leadless Ceramic Chip Carrier
	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
REF03	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	J	8-Pin Can TO-99A
REF05	Z	8-Lead Cerdip
	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	J	8-Pin Can TO-99A
	P	8-Lead Plastic DIP
REF10	S	8N-Lead SOIC, 1.75 mm
	J	8-Pin Can TO-99A

Model	Suffix	Package Description	Model	Suffix	Package Description
REF43	RC	20-Leadless Ceramic Chip Carrier	SSM2024	P	16-Lead Plastic DIP, 0.3 W
	Z	8-Lead Cerdip	SSM2110	P	16-Lead Plastic DIP, 0.3 W
	P	8-Lead Plastic DIP	SSM2118T	P	16-Lead Plastic DIP, 0.3 W
	J	8-Pin Can TO-99A	SSM2125A	P	48-Lead Plastic DIP
REF191	S	8N-Lead SOIC, 1.75 mm	SSM2126A	P	48-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm	SSM2135	P	8-Lead Plastic DIP
	P	8-Lead Plastic DIP	S	8N-Lead SOIC, 1.75 mm	
REF192	RU	8-Lead TSSOP, 1.0 mm	SSM2139	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm	SSM2141	P	8-Lead Plastic DIP
REF193	P	8-Lead Plastic DIP	S	8N-Lead SOIC, 1.75 mm	
	S	8N-Lead SOIC, 1.75 mm	SSM2142	S	16 W SOIC, 2.65 mm
REF194	P	8-Lead Plastic DIP	P	8-Lead Plastic DIP	
	S	8N-Lead SOIC, 1.75 mm	SSM2143	P	8-Lead Plastic DIP
REF195	P	8-Lead Plastic DIP	S	8N-Lead SOIC, 1.75 mm	
	S	8N-Lead SOIC, 1.75 mm	SSM2160	P	24-Lead Plastic DIP, 0.3 W
REF196	Z	8-Lead Cerdip	S	24W-Lead SOIC, 2.65 mm	
	P	8-Lead Plastic DIP	SSM2161	P	20-Lead Plastic DIP, 0.3 W
REF198	S	8N-Lead SOIC, 1.75 mm	S	20W-Lead SOIC, 2.65 mm	
	S	8N-Lead SOIC, 1.75 mm	SSM2163	P	28-Lead Plastic DIP, 0.6 W
SMP04	Q	16-Lead Ceramic DIP, 0.3 W	S	28 W-Lead SOIC, 2.65 mm	
	P	16-Lead Plastic DIP, 0.3 W	SSM2164	P	14-Lead Plastic DIP, 0.3 W
SMP08	S	16N-Lead SOIC, 1.75 mm	S	16N-Lead SOIC, 1.75 mm	
	P	16-Lead Plastic DIP, 0.3 W	SSM2165	P	8-Lead Plastic DIP
	S	16-Lead SSOP, 1.75 mm	S	8N-Lead SOIC, 1.75 mm	
	RU	16-Lead TSSOP, 1.1 mm	SSM2166	P	14-Lead Plastic DIP, 0.3 W
SMP10	P	16-Lead Plastic DIP, 0.3 W	S	14N-Lead SOIC, 1.75 mm	
	S	16 W-Lead SOIC, 2.64 mm	SSM2210	S	16N-Lead SOIC, 1.75 mm
SMP11	RC	20-Leadless Ceramic Chip Carrier	SSM2211	P	8-Lead Plastic DIP
	Y	14-Lead Cerdip, 0.3 W	S	8N-Lead SOIC (Thermal Coast Line) 1.7 mm	
	P	14-Lead Plastic DIP, 0.3 W	SSM2220	S	16N-Lead SOIC, 1.75 mm
	S	16 W SOIC, 2.65 mm	P	8-Lead Plastic DIP	
SMP18	Q	16-Lead Ceramic DIP, 0.3 W	SSM2275	P	8-Lead Plastic DIP
	P	16-Lead Plastic DIP, 0.3 W	RM	8-Lead $\mu$ SOIC, 25 Mil Ctr 1.09 mm	
SSM2000	RU	16-Lead TSSOP, 1 mm	R	8N-Lead SOIC, 1.75 mm	
	S	16N-Lead SOIC, 1.75 mm	S	16N-Lead SOIC, 1.75 mm	
	P	24-Lead Plastic DIP, 0.3 W	SSM2300	P	14-Lead Plastic DIP, 0.3 W
	S	24W-Lead SOIC, 2.65 mm	SSM2402	S	16 W SOIC, 2.65 mm
SSM2017	P	16 W SOIC, 2.65 mm	P	20-Lead Plastic DIP, 0.3 W	
	P	8-Lead Plastic DIP	S	20W-Lead SOIC, 2.65 mm	
SSM2018	P	16-Lead Plastic DIP, 0.3 W	SSM2404	P	14-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm	SSM2412	S	16 W SOIC, 2.65 mm
SSM2018T	P	16-Lead Plastic DIP, 0.3 W	S	16 W SOIC, 2.65 mm	
	S	16 W SOIC, 2.65 mm			



# PACKAGE OPTIONS

Model	Suffix	Package Description
SSM2475	P	14-Lead Plastic DIP, 0.3 W
	RU	14-Lead TSSOP, 1 mm
SSM2475	P	14N-Lead SOIC, 1.75 mm
SSSM2210	P	8-Lead Plastic DIP
SSSM2300	P	16-Lead Plastic DIP, 0.3 W
SW01	Q	16-Lead Ceramic DIP, 0.3 W
SW06	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
	S	16 W-Lead SOIC, 2.64 mm
	RC	20-Leadless Ceramic Chip Carrier
SW201	Q	16-Lead Ceramic DIP, 0.3 W
	P	16-Lead Plastic DIP, 0.3 W
SW202	P	16-Lead Plastic DIP, 0.3 W
	S	16 W SOIC, 2.65 mm

Model	Suffix	Package Description
TMP01	P	8-Lead Plastic DIP
	J	8-Pin Can TO-99A
	S	8N-Lead SOIC, 1.75 mm
TMP03	T9	3-Lead Plastic TO-92
	ST	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
TMP04	T9	3-Lead Plastic TO-92
	RU	8-Lead TSSOP, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
TMP12	P	8-Lead Plastic DIP
	S	8N-Lead SOIC, 1.75 mm
	S	8N-Lead SOIC, 1.75 mm
TMP17	T9	3-Lead Plastic TO-92
TMP35	RT	5-Lead SOT-23, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm

Model	Suffix	Package Description
TMP36	T9	3-Lead Plastic TO-92
	RT	5-Lead SOT-23, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
TMP37	T9	3-Lead Plastic TO-92
	RT	5-Lead SOT-23, 1.0 mm
	RT	5-Lead SOT-23, 1.0 mm
	S	8N-Lead SOIC, 1.75 mm
1B21	N	38-Lead Plastic Custom Hybrid
1B22	N	38-Lead Plastic Custom Hybrid
1B31	D	28-Lead Ceramic Custom Hybrid
	N	28-Lead Plastic Custom Hybrid
1B32	N	28-Lead Plastic Custom Hybrid
1B41	N	38-Lead Plastic Custom Hybrid
1B51	N	38-Lead Plastic Custom Hybrid



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax-code
--------------	-------------------------------	------------	----------	-----------------------------------	----------

## A/Ds

### Eval-Control Board

	EVAL-CONTROL BOARD	\$ 250.00	DSP-Based Host Controller	Yes	1923
	EVAL-110VAC-US	\$ 20.00	Eval Control Board AC Line to DC Converter, USA	Yes	1923
	EVAL-220VAC-EU	\$ 20.00	Eval Control Board AC Line to DC Converter, Europe	Yes	1923
	EVAL-220VAC-UK	\$ 20.00	Eval Control Board AC Line to DC Converter, United Kingdom	Yes	1923

### Eval-Control Board Compatible A/Ds

AD7721	EVAL-AD7721CB	\$ 150.00		No	
AD7722	EVAL-AD7722CB	\$ 150.00		No	
AD7723	EVAL-AD7723CB	\$ 150.00		No	
AD7730	EVAL-AD7730EB	\$ 150.00		No	
AD7731	EVAL-AD7731EB	\$ 150.00		No	
AD7851	EVAL-AD7851CB	\$ 150.00		No	1873
AD7853	EVAL-AD7853CB	\$ 150.00		No	1930
AD7854	EVAL-AD7854CB	\$ 150.00		No	
AD7856	EVAL-AD7856CB	\$ 150.00		No	
AD7858	EVAL-AD7858CB	\$ 150.00		No	
AD7859	EVAL-AD7859CB	\$ 150.00		No	
AD7862	EVAL-AD7862CB	\$ 150.00		No	
AD7889	EVAL-AD7889-1CB	\$ 150.00	±5 V or ±10 V Input Range		
AD7889	EVAL-AD7889-2CB	\$ 150.00	0 V to +2.5 V or +5 V Input Range		
AD7889	EVAL-AD7889-3CB	\$ 150.00	±2.5 V Input Range		
AD7888	EVAL-AD7888CB	\$ 150.00	0 V to V <sub>REF</sub> Input Range		
AD7891-1CB	EVAL-AD7891-1CB	\$ 150.00		No	
AD7891-2CB	EVAL-AD7891-2CB	\$ 150.00		No	
AD7892-2	EVAL-AD7892-2CB	\$ 150.00		No	1931
AD7892-3	EVAL-AD7892-3CB	\$ 150.00		No	1932
AD7895	EVAL-AD7895CB	\$ 150.00		No	
AD7896	EVAL-AD7896CB	\$ 50.00		No	

### EZ-LITE Board Compatible A/Ds

AD73311	EVAL-AD73311EB	\$ 69.00	Add on to EZ-KIT LITE Owners		
AD73311	EVAL-AD73311EZ	\$ 149.00	Eval Board with Modified EZ-KIT LITE		
AD73322	EVAL-AD73322EB	\$ 69.00	Add on to EZ-KIT LITE Owners		
AD73322	EVAL-AD73322EZ	\$ 149.00	Eval Board with Modified EZ-KIT LITE		

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax- code
<i>Stand-Alone Boards for A/Ds</i>					
AD10242	AD10242/PCB	\$1,800.00			2049
AD1170	AC5004	\$ 294.58		Yes	
AD1550	AD1550-EB	\$ 750.00			
AD1671	AD1671-EB	\$ 300.00			1059
AD1672	AD1672-EB	\$ 150.00			1880
AD1816A	AD1816AEB	\$ TBD			
AD1821	AD1821EX-KIT		Reference Design, Eval Board, Schematics, Gerber Files, BOM, Apps S/W & User Manual	No	
AD6600	AD6600ST/PCB	\$ 150.00	Contact Factory for Delivery		
AD6620	AD6620ST/PCB	\$ 150.00	Contact Factory for Delivery		
AD6640	AD6640ST/PCB	\$ 150.00	Contact Factory for Delivery		
AD676	AD676-EB	\$ 200.00			
AD677	AD677-EB	\$ 200.00		Yes	
AD7710	EVAL-AD7710EB	\$ 150.00	Application Note AN-241		
AD7711	EVAL-AD7711EB	\$ 150.00	Application Note AN-366		
AD7712	EVAL-AD7712EB	\$ 150.00	Application Note AN-365		
AD7713	EVAL-AD7713EB	\$ 150.00	Application Note AN-367		
AD7714-3	EVAL-AD7714-3EB	\$ 150.00		Yes	
AD7714-5	EVAL-AD7714-5EB	\$ 150.00		Yes	
AD7715-3	EVAL-AD7715-3EB	\$ 150.00		Yes	
AD7715-5	EVAL-AD7715-5EB	\$ 150.00		Yes	
AD7716	EVAL-AD7716EB	\$ 150.00		Yes	
AD7878	MC/BV-AD7878-EB	\$ 250.00			1376
AD7890	EVAL-AD7890-10EB	\$ 150.00	Application Note AN-413		2291
AD7890	EVAL-AD7890-2EB	\$ 150.00	Application Note AN-413		2291
AD7890	EVAL-AD7890-4EB	\$ 150.00	Application Note AN-413		2291
AD7893	EVAL-AD7893EB	\$ 150.00	Application Note AN-381		
AD872	AD872-EB	\$ 330.00		Yes	
AD876	AD876-EB	\$ 200.00			1838
AD9005	AD9005/PWB	\$ 49.00	Mounting Card, Part Not Included	Yes	
AD9005	AD9005/PCB	\$ 450.00	Part Not Included	Yes	
AD9020	AD9020/PCB	\$ 825.00	Part Not Included	Yes	
AD9034	AD9034/PCB	\$ 500.00	Part Not Included		1451
AD9034	AD9034/PWB	\$ 50.00	Part Not Included		1451
AD9040	AD9040A/PCB	\$ 250.00			1453
AD9042	AD9042D/PCB	\$ 350.00	Through-Hole AD9042	Yes	1922
AD9042	AD9042ST/PCB	\$ 150.00	Surface Mount AD9042	Yes	1922
AD9049	AD9049/PCB	\$ 275.00			1976

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax-code
<i>Stand-Alone Boards for A/Ds (continued)</i>					
AD9050	AD9050/PCB	\$ 275.00			1843
AD9054	AD9054/PCB	\$ 195.00		Yes	2093
AD9057	AD9057/PCB	\$ 195.00		Yes	
AD9058	AD9058/PCB	\$ 550.00	Part Not Included	Yes	
AD9059	AD9059/PCB	\$ 195.00		Yes	
AD9060	AD9060/PCB	\$ 825.00	Part Not Included	Yes	
AD9066	AD9066/PCB	\$ 195.00			1905
AD9070	AD9070/PCB	\$ 195.00		Yes	
AD9070	AD9071/PCB	\$ 195.00		Yes	
AD9100	AD9100/PCB	\$ 165.00	Part Not Included	Yes	
AD9101	AD9101/PCB	\$ 114.35			1458
AD9200	AD9200SSOPEVAL	\$ 200.00	Part Included, SSOPEVAL Package		
AD9200	AD9200TQPEVAL	\$ 200.00	Part Included, TQFP Package		
AD9220	AD9220-EB	\$ 220.00			1936
AD9221	AD9221-EB	\$ 200.00			1936
AD9223	AD9223-EB	\$ 200.00			1936
AD9243	AD9243-EB	\$ 195.00			2036
<b>Accelerometers</b>					
ADXL05	ADXL05EB	\$ 15.00	Mounting Card, Part Not Included	Yes	
ADXL05EM-1	ADXL05EM-1	\$ 99.95	Single Axis		1943
ADXL05EM-3	ADXL05EM-3	\$ 220.00	Triple Axis		1943
ADXL150	ADXL150EM-1	\$ 125/\$240	Single Axis	Yes	
ADXL150	ADXL150EM-3	\$ 125/\$240	Triple Axis	Yes	
ADXL50	ADXL50EB	\$ 15.00	Mounting Card, Part Not Included	Yes	
ADXL50EM-1	ADXL50EM-1	\$ 99.95	Single Axis		1943
<b>CCD Processors</b>					
AD9801	AD9801-EB	\$ 250.00	Board Description, Schematic & Layout Info	Yes	2118
AD9802	AD9802-EB	\$ 250.00	Board Description, Schematic & Layout Info	Yes	2195
AD9805	AD9805-EB	\$ 250.00	Board Description, Schematic & Layout Info	Yes	2021
AD9807	AD9807-EB	\$ 250.00	Board Description, Schematic & Layout Info	Yes	2021

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax-code
<b>Communications</b>					
AD6432	AD6432-EB	\$ 150.00	Contact Factory for Delivery		
AD6459	AD6459-EB	\$ 150.00	Contact Factory for Delivery		
AD7002	MC/BV-AD7002-EB	\$ 250.00			
AD7005	MC/BV-AD7005-EB	\$ 250.00			
AD7008	AD7008/PCB	\$ 250.00		Yes	1993
AD7008	AD7008/PCB	\$ 250.00			1994
AD9830	EVAL-AD9830EB	\$ 150.00			1990
AD9831	EVAL-AD9831EB	\$ 150.00			1990
AD9850	AD9850CG/PCB	\$ 98.50	Optimized for Clock Generator		
AD9850	AD9850FS/PCB	\$ 98.50	Optimized for Frequency Output		
<b>Crosspoint Switch</b>					
AD8116	AD8116-EB	\$ 395.00		Yes	2070
AD8108	AD8108-EB	\$ 395.00		Yes	2191
AD8109	AD8109-EB	\$ 395.00		Yes	2191
AD8110	AD8110-EB	\$ 395.00		Yes	2436
AD8111	AD8111-EB	\$ 395.00		Yes	2436
AD8170	AD8170-EB	\$ 75.00		Yes	2055
AD8174	AD8174-EB	\$ 75.00		Yes	2055
AD8180	AD8180-EB	\$ 75.00		Yes	2045
AD8182	AD8182-EB	\$ 75.00		Yes	2045
<b>D/As</b>					
AD420	AD420-EB	\$ 150.00		Yes	
AD421	EVAL-AD421EB	\$ 150.00		Yes	
AD768	AD768-EB	\$ 150.00			1334
AD9760	AD9760-EB	\$ 150.00	Application Note AN-420	Yes	1989
AD9761	AD9761-EB	\$ 150.00		Yes	2135
AD9774	AD9774-EB	\$ 150.00		Yes	2168
AD9762	AD9762-EB	\$ 150.00	Application Note AN-420	Yes	2008
AD1855	AD1855-EB	\$ 150.00	Contact Factory for Delivery	Yes	2420
AD1857	AD1857-EB	\$ 150.00	Contact Factory for Delivery	Yes	1065
AD1858	AD1858-EB	\$ 150.00	Contact Factory for Delivery	Yes	1065
AD1859	AD1859-EB	\$ 150.00	Contact Factory for Delivery	Yes	1988
AD1892	AD1892-EB	\$ 150.00	Contact Factory for Delivery	Yes	2046

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax- code
<b>DSP Processors</b>					
ADSP-2101	ADDS-2101-EZ-KIT	\$ 499.00			
ADSP-2101	ADDS-2101-EZ-LAB	\$ 295.00	ADSP-2101/30/5/15/6x Family		
ADSP-2111	ADDS-2111-EZ-KIT	\$ 499.00			
ADSP-2111	ADDS-2111-EZ-LAB	\$ 395.00			
ADSP-2171	ADDS-2171-EZ-LAB	\$ 695.00			
ADSP-2181	ADDS-21XX-EZ-LITE	\$ 89.00			
ADSP21CSP01	ADDS-21CSP01-EZL	\$ 995.00			
ADSP-21020	ADDS-21020-EZ-LA	\$ 795.00			
ADSP-21020	ADDS-21020-EZKIT	\$1,295.00			
ADSP-21062	ADDS-2106X-EZ-KI	\$1,995.00	ADSP-21060 and ADSP-21062		
ADSP-21062	ADDS-2106X-EZ-LA	\$1,495.00			

## Hardware Monitor

ADM9240	TBD	\$	TBD	Board Simulates $\mu$ P, Includes Fan with Tacho Output	
---------	-----	----	-----	---	--

## Log Amps

AD606	AD606-EB	\$ 49.00		Yes	1824
AD607	AD607-EB	\$ 199.00			
AD608	AD608-EB	\$ 199.00		Yes	
AD640	AD640-EB	\$ 250.00		Yes	
AD641	AD641-EB	\$ 250.00		Yes	
AD8307	AD8307-EB	\$ 250.00		Yes	

## Mixers

AD831	AD831-EB	\$ 99.95		Yes	
-------	----------	----------	--	-----	--

## Motion Control

ADMC201	ADMC201-EVAL	\$ 195.00		No	
ADMC201	ADMC201-LAB	\$ 400.00	With On-Board DSP Processor, ADSP-2101	No	
ADMC330		\$ 225-395	EVAL Board, Software, Developers Manual, ADSP-21xx Tools	No	
ADMC300		\$ 395.00	EVAL Board, Software, Developers Manual, ADSP-21xx Tools	No	
AD2S90	AD2S90EB	\$ 75.00	PC Board Only, Not Populated	No	

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax- code
<b>Op Amps</b>					
AD815	AD815-EB	\$ 90.00		No	1938
AD8001	AD8001R-EB+2	\$ 37.50		No	1396
AD8011	AD8011-EB	\$ 37.50		No	1863
AD8036	AD8036-EB	\$ 37.50		No	1836
AD8037	AD8037-EB	\$ 37.50		No	1836
AD8041	AD8041-EB	\$ 37.50		No	1925
AD8047	AD8047-EB	\$ 37.50		No	1868
AD8048	AD8048-EB	\$ 37.50		No	1868
AD9631	AD9631-EB	\$ 37.50		No	1468
AD9632	AD9632-EB	\$ 37.50		No	1468
Op-Amps	EVAL-1OPAMP	\$ 20.00	Single Op Amp Eval Board, Comes with Connectors, Socket Pins, PS Pins	AN-398	
Op-Amps	EVAL-2OPAMP	\$ 25.00	Dual Op Amp Eval Board, Comes with Connectors, Socket Pins, PS Pins	AN-398	
Op-Amps	EVAL-3OPAMP	\$ 35.00	Quad Op Amp Eval Board, Comes with Connectors, Socket Pins, PS Pins	AN-398	
<b>RGB to NTSC Converters</b>					
AD722	AD722-EB	\$ 125.00		Yes	
AD724	AD724-EB	\$ 125.00		Yes	
ADV7175A	EVAL-ADV7175EB	\$ 150.00			
ADV7176A	EVAL-ADV7176EB	\$ 150.00	Need Macrovision License	Yes	
ADV7177	EVAL-ADV7177EB	\$ 150.00			
<b>Signal Conditioners</b>					
1B31	AC1222	\$ 143.33	Part Not Included	Yes	
1B32	AC1224	\$ 121.28	Part Not Included	Yes	
2B30/31	AC1213	\$ 177.87	Part Not Included	Yes	
<b>VGAs</b>					
AD603	AD603-EB	\$ 49.00		Yes	
AD604	AD604-EB	\$ 79.00		Yes	
AD605	AD605-EB	\$ 79.00		Yes	
<b>Video Muxes</b>					
AD8170	AD8170-EB	\$ 75.00			2055
AD8174	AD8174-EB	\$ 75.00			2055
AD8180	AD8180-EB	\$ 75.00			2045
AD8182	AD8182-EB	\$ 75.00			2045

\*When "No," call factory for data sheet.



# EVALUATION BOARDS

Device Model	Evaluation Board Model Number	Unit Price	Comments	Documentation* On Part Data Sheet	Fax-code
<b>Time Domain, Laser Diode Drivers</b>					
AD9560	AD9560/PCB	\$ 69.00			1894
AD9660	AD966X/PCB	\$ 280.00	w/Computer Interface, Memory & Pulse Conditioning	Yes	
AD9661A	AD966X/PCB	\$ 280.00	w/Computer Interface, Memory & Pulse Conditioning	Yes	
<b>Temperature Sensors</b>					
TMP03	TMP03EVAL	\$ 99.00			1850
TMP12	TMP12EVAL	\$ 99.00			1970

\*When "No," call factory for data sheet.



**PRODUCT FAMILIES STILL AVAILABLE**

The information published in this Reference Manual is intended to assist the user in choosing components for the design of *new* equipment, using the most cost-effective products available from Analog Devices. The popular product types listed below may have been designed into your circuits in the past, but they are no longer likely to be the most economic choice for your new designs. Nevertheless, we recognize that it is often a wise choice to refrain from redesigning proven equipment, and we are continuing to make these products available for use in existing designs. Data sheets on these products are available upon request.

Model	Model	Model	Model	Model	Model	Model
AC1226	AD578	AD7502	AD9701	DAC88	OP15	PM7528
AC2626	AD579	AD7503	AD9760	DAC89	OP16	PM7533
AD2S44	AD582	AD7506	AD9762	DAC100	OP17	PM7541A
AD2S75	AD611	AD7507	AD ADC71	DAC210	OP20	PM7543
AD20msp511	AD671	AD7520	AD ADC72	DAC888	OP21	PM7545
AD20msp512	AD744	AD7522	AD ADC80	DAC1136	OP22	PM7548
AD20msp815	AD875	AD7523	AD ADC84	DAC1138	OP32	RDC1742
AD246	AD1139	AD7525	AD ADC85	DAC1408A	OP41	REF05
AD346	AD1154	AD7541A	ADC912A	HDS1240E	OP43	REF08
AD363R	AD1170	AD7542	ADC1131	HOS050/050A/050C	OP44	REF10
AD364R	AD1175	AD7543	ADC1143	HOS060	OP50	RPT82
AD365	AD1341	AD7545	AD DAC80	HTC0300A	OP64	RPT83
AD380	AD1362	AD7545A	AD DAC85	HTS0010	OP80	RPT86
AD389	AD1376	AD7548	AD DAC87	HTS0025	OP160	RPT87
AD390	AD1377	AD7572	ADG506A	MUX08	OP207	SDC1740
AD394	AD1860	AD7574	ADG507A	MUX16	OP215	SDC1741
AD395	AD2700	AD7576	ADG529A	MUX24	OP260	SDC1742
AD396	AD2701	AD7590DI	ADMK100	MUX28	OP420	SMP11
AD510	AD2702	AD7592DI	ADSC-SKD1	OP01	OP421	SSM2018
AD517	AD2710	AD7773	AMP03	OP02	OSC1758	SSM2110
AD521	AD2712	AD7820	AMP05	OP04	PKD01	SSM2139
AD522	AD5212	AD7850	BUF03	OP05	PM111	SSM2300
AD532	AD5215	AD7895	CMP01	OP06	PM139	SW01
AD533	AD5539	AD9000	CMP02	OP09	PM139A	SW06
AD535	AD7228	AD9003A	CMP05	OP10	PM155	SW201
AD562	AD7240	AD9005A	CMP08	OP11	PM156	SW202
AD563	AD7245	AD9007	CMP404	OP12	PM157	290A
AD567	AD7248	AD9502	DAC10	OP14	PM1012	292A
AD572	AD7501	AD9610	DAC86		PM7524	



# SUBSTITUTION GUIDE

The Substitution Guide is separated into four sections:

1. Obsolete Generics on Last Time Buy
2. Obsolete Generics No Longer Manufactured by Analog Devices, but Still Available from Intrinsics
3. Obsolete Generics and All Models
4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

## 1. Obsolete Generics on Last Time Buy

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Last Order	Last Delivery
5962-87763013X	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
5962-87763023X	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
5962-87763033X	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
5962-87764043A	AD7828UE/883B	None	None	12/31/97	12/31/98
5962-8969802LX	A/D, AD7580SQ/883B	None	AD7580AQ	12/31/97	12/31/98
5962-9063501M2A	Switch, ADG528ATE/883B	None	ADG528AKP	12/31/97	12/31/98
5962-9463701MXC	A/D, 10-Bit, 60 MSPS	AD9020SZ/883B		5/1/98	11/1/98
5962-9463702MXC	A/D, 10-Bit, 60 MSPS	AD9020TZ/883B		5/1/98	11/1/98
5962-9468601MXA	A/D, 12-Bit, 5 MSPS	AD871SD/883B		5/1/98	11/1/98
5962-9468602MYA	A/D, 12-Bit, 5 MSPS	AD871SE/883B		5/1/98	11/1/98
59629097901M2A	AD9901TE/883B	None	None	1/1/98	7/1/98
59629097901MCA	AD9901TQ/883B	None	None	1/1/98	7/1/98
59629234701M1A	AD9696TH/883B	None	AD8561	1/1/98	7/1/98
59629234701MPA	AD9696TQ/883B	None	AD8561	1/1/98	7/1/98
59629234701MXA	AD9696TZ/883B	None	AD8561	1/1/98	7/1/98
59629234702MEA	AD9698TQ/883B	None	AD8598	1/1/98	7/1/98
59629234702MYA	AD9698TZ/883B	None	AD8598	1/1/98	7/1/98
59629306201M3A	AD9720TE/883B	None	AD9731AN	1/1/98	7/1/98
59629306201MXA	AD9720TQ883B	None	AD9731AN	1/1/98	7/1/98
59629306202M3A	AD9721TE/883B	None	AD9731AN	1/1/98	7/1/98
59629306202MXA	AD9721TQ/883B	None	AD9731AN	1/1/98	7/1/98
AD1341	DAS, 12-Bit	None	AD7891	4/1/98	4/1/99
12040	DAS, 12-Bit	AD1341	None	7/30/93	7/30/94
AD1671AP	A/D, 12-Bit, 1.5 MSPS	AD1671JP		5/1/98	11/1/98
AD1671AQ	A/D, 12-Bit, 1.5 MSPS	AD1671JQ		5/1/98	11/1/98
AD1671SQ	A/D, 12-Bit, 1.5 MSPS	5962-9312601MXA		5/1/98	11/1/98
AD1671SQ/883B	A/D, 12-Bit, 1.5 MSPS	5962-9312601MXA		5/1/98	11/1/98
AD1856	D/A, 16-Bit	AD1851		10/31/98	10/30/99
AD1860	D/A, 18-Bit	AD1861		10/31/98	10/30/99
AD1864	D/A, Dual 18-Bit, Audio	AD1865		10/31/98	10/30/99
AD1876	A/D, 16-Bit, Audio	AD677		10/8/98	10/8/99
AD1878	A/D, Dual 16-Bit, Audio	AD1879		10/31/98	10/30/99
AD346	SHA	None	AD389	4/1/98	4/1/99



# SUBSTITUTION GUIDE

## 1. Obsolete Generics on Last Time Buy

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Last Order	Last Delivery
AD568SE/883B	D/A, 12-Bit	5962-89808023A		5/1/98	11/1/98
AD668JCHIPS	D/A, 12-Bit	None	None	5/1/98	11/1/98
AD668SQ	D/A, 12-Bit	AD668SQ/883B		5/1/98	11/1/98
AD671	A/D, 12-Bit, 1.5 MSPS	None	AD9221	5/1/98	11/1/98
AD671/EB	Evaluation Board	None	None	5/1/98	11/1/98
AD671-500-EB	Evaluation Board	None	None	5/1/98	11/1/98
AD720JP	ANALOG RGB to ANALOG NTSC/PAL	None	AD722JR16	5/1/98	11/1/98
AD721JP	ANALOG RGB to ANALOG NTSC/PAL	None	AD722JR16	5/1/98	11/1/98
AD7248SE/883B	D/A, 12-Bit	None	AD7248AAP or SQ/883B	12/31/97	12/31/98
AD7535SE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7535KP or TQ/883B	12/31/97	12/31/98
AD7535TE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7535KP or TQ/883B	12/31/97	12/31/98
AD7536SE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7536JP or TQ/883B	12/31/97	12/31/98
AD7536TE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7536KP or TQ/883B	12/31/97	12/31/98
AD7537SE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
AD7537TE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
AD7537UE/883B	D/A, Single, 14-Bit, Inverted R2R	None	AD7537KP or TQ/883B	12/31/97	12/31/98
AD7542SE/883B	D/A, Single, 12-Bit, Inverted R2R	None	AD7542JP or TQ/883B	12/31/97	12/31/98
AD7542TE/883B	D/A, Single, 12-Bit, Inverted R2R	None	AD7542KP or TQ/883B	12/31/97	12/31/98
AD7549SE/883B	D/A, Dual, 12-Bit, Inverted R2R	None	None	12/31/97	12/31/98
AD7549TE/883B	D/A, Dual, 12-Bit, Inverted R2R	None	None	12/31/97	12/31/98
AD7579SE/883B	A/D, 10-Bit, 20 $\mu$ s	None	5962-8969801LX	12/31/97	12/31/98
AD7580SE/883B	A/D, 10-Bit, 20 $\mu$ s	None		12/31/97	12/31/98
AD7580SQ/883B	A/D, 10-Bit, 20 $\mu$ s	AD7580AQ		12/31/97	12/31/98
AD7582TE/883B	A/D, 12-Bit, 100 $\mu$ s, Auto Zero	None	AD7582KP or TQ/883B	12/31/97	12/31/98
AD7592DITE/883B	Switch	None	AD7592DICK	12/31/97	12/31/98
AD7714SQ-5	A/D, 24-Bit, Sigma-Delta	AD7714AN-5	None	9/30/98	9/30/99
AD773-EB	Evaluation Board	AD773AJD	None	5/1/98	11/1/98
AD773AKD	A/D, 10-Bit, 20 MSPS	AD773AJD	None	5/1/98	11/1/98
AD773ASD/883B	A/D, 10-Bit, 20 MSPS	AD773AJD	None	5/1/98	11/1/98
AD775-EB	Evaluation Board	None	None	5/1/98	11/1/98
AD783AQ	T/H	AD783JQ		5/1/98	11/1/98
AD783AR	T/H	AD783JR		5/1/98	11/1/98
AD783AR-REEL	T/H	AD783JR		5/1/98	11/1/98
AD783SQ/883B	T/H	AD783JR		5/1/98	11/1/98
AD800-45	High Speed Networks	None	None	8/26/98	8/26/99
AD803	High Speed Networks	None	None	8/26/98	8/26/99
AD805	High Speed Networks	None	None	8/26/98	8/26/99
AD871/EB	Evaluation Board	None	None	5/1/98	11/1/98
AD872ACHIPS	A/D, 12-Bit, 10 MSPS	None		5/1/98	11/1/98
AD872ASD	A/D, 12-Bit, 10 MSPS	AD872ASD/883B		5/1/98	11/1/98



# SUBSTITUTION GUIDE

## 1. Obsolete Generics on Last Time Buy

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Last Order	Last Delivery
AD875	A/D, 10-Bit, 15 MSPS	None	AD9220	5/1/98	11/1/98
AD875-EB	Evaluation Board	None	None	5/1/98	11/1/98
AD876ARS-8	A/D, 8/10-Bit, 20 MSPS	AD876JRS-8	None	5/1/98	11/1/98
AD876ARS-8RL	A/D, 8/10-Bit, 20 MSPS	AD876JRS-8RL	None	5/1/98	11/1/98
AD9000CHIPS	A/D, 6-Bit, 50>75 MSPS	None	None	5/1/98	11/1/98
AD9002CHIPS	A/D, 8-Bit, 125 MSPS	None	None	5/1/98	11/1/98
AD9012CHIPS	A/D, 8-Bit, 75 MSPS	None	None	5/1/98	11/1/98
AD9022	A/D, 12-Bit, 20 MSPS	None	AD9225 or AD9042	5/1/98	11/1/98
AD9023	A/D, 12-Bit, 20 MSPS	None	AD9225 or AD9042	5/1/98	11/1/98
AD9026/PCBT	Evaluation Board	None	None	1/1/98	7/1/98
AD9026AD	A/D, 12-Bit, 25 MSPS TTL	None	AD9225AR or AD9042AD	1/1/98	7/1/98
AD9027/PCBE	Evaluation Board	None	None	1/1/98	7/1/98
AD9027AD	A/D, 12-Bit, 31 MSPS ECL	None	AD9225AR or AD9042AD	1/1/98	7/1/98
AD9040ACHIPS	A/D, 10-Bit, 40 MSPS Die	None	None	5/1/98	11/1/98
AD9100AE	T/H	None	AD9100AD	5/1/98	11/1/98
AD9100SE/883B	T/H	None	AD9100SD/883B	5/1/98	11/1/98
AD9101AE	T/H	None	AD9101AR	5/1/98	11/1/98
AD9101CHIPS	T/H Die	None	AD9101AR	5/1/98	11/1/98
AD9101SE	T/H	None	AD9101AR	5/1/98	11/1/98
AD9300CHIPS	Multiplexer	None	None	5/1/98	11/1/98
AD9696	Comparator, Single	None	AD8598	12/31/98	12/31/99
AD9698	Comparator, Dual	None	AD8598	12/31/98	12/31/99
AD9700BE	A/D, 8-Bit, 125 MSPS	None	None	5/1/98	11/1/98
AD9700BW	A/D, 8-Bit, 125 MSPS	None	None	5/1/98	11/1/98
AD9700CHIPS	A/D, 8-Bit, 125 MSPS, Die	None	None	5/1/98	11/1/98
AD9700SEB	A/D, 8-Bit, 125 MSPS	None	None	5/1/98	11/1/98
AD9701CHIPS	A/D, 8-Bit, 225 MSPS, Die	None	None	5/1/98	11/1/98
AD9701SE	A/D, 8-Bit, 225 MSPS	None	None	5/1/98	11/1/98
AD9720	D/A, 10-Bit, 300 MSPS ECL	None	None	1/1/98	7/1/98
AD9721	D/A, 10-Bit, 100 MSPS TTL	None	AD9731	1/1/98	7/1/98
AD9768CHIPS	D/A, Single, 8-Bit, 100 MSPS, Die	None	None	5/1/98	11/1/98
ADG202ATE/883B	Switch	None	ADG202ATQ/883B	12/31/97	12/31/98
ADG221TE/883B	Switch	None	ADG221KP	12/31/97	12/31/98
ADG221TQ/883B	Switch	None	ADG221KN	12/31/97	12/31/98
ADG222TE/883B	Switch	None	ADG222KP	12/31/97	12/31/98
ADG222TQ/883B	Switch	None	ADG222KN	12/31/97	12/31/98
ADG528ATE/883B	Multiplexer	None	ADG528AKP	12/31/97	12/31/98
ADSP-21CSP01	DSP, 16-Bit, Microprocessor	None	None	7/1/98	7/1/99
HAS1201	A/D, 1 $\mu$ s	None	AD1672	4/1/98	4/1/99
HDG-0805B	D/A, 8-Bit, High Speed	None	AD9701	4/1/98	4/1/99



# SUBSTITUTION GUIDE

## 2. Obsolete Generics No Longer Manufactured by Analog Devices, But Still Available from Intrinsics. Call 781-828-4992

Model #	Description	Model #	Description
171	Op Amp, Output Voltage, $\pm 100$ V	AC1010	Socket
233	Op Amp, Chopper	AC1016	Socket
277	Isolation Amp	AC1017	Socket
281	Isolation Amp	AC1050	Socket
284	Isolation Amp	AC1213	Socket
286	Isolation Amp	AC1214	Socket
289	Isolation Amp	AC1218	Socket
290	Isolation Amp	AD2006	Panel Meter, 3 1/2 Digits, AC Powered
292	Isolation Amp	AD2010	Panel Meter, 3 1/2 Digits, +5 V Supply
310	Op Amp, Low Bias Current	AD2021	Panel Meter
429	Multiplier	AD2026	Panel Meter, 3 Digits, +5 V Supply
442	Precision RMS-DC	ADC1130	A/D, 14-Bit, 25 $\mu$ s, See AD679 or AD779
451	Frequency-to-Voltage Converter	ADC1131	A/D, 14-Bit, 12 $\mu$ s,
453	Voltage-to-Frequency Converter	ADC1140	A/D, 16-Bit, Low Power, 70 $\mu$ s
458	Voltage-to-Frequency Converter	ADC1143	A/D, 16-Bit, Low Power, 70 $\mu$ s
460	Voltage-to-Frequency Converter	DAC1136	D/A, 16-Bit
751	Log Amp	DAC1138	D/A, 18-Bit
755	Log Amp	DAC1146	D/A, 16-Bit
756	Log Amp	DAS1152	DAS Module
757	Log Amp	DAS1153	DAS Module
759	Log Amp	DAS1157	DAS, Module, 14-Bit
968	Power Supply	DAS1158	DAS Module
2B20	Signal Conditioner	DAS1159	DAS Module
2B22	Signal Conditioner	SHA1144	SHA
2B23	Signal Conditioner		
2B31	Signal Conditioner		
2B34	Signal Conditioner		
2B50	Signal Conditioner		
2B54	Signal Conditioner		
2B55	Signal Conditioner		



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
40	Op Amp	AD711
41	Op Amp	AD515A
42	Op Amp	AD549
43	Op Amp	AD549
44	Op Amp	OP42
45	Op Amp	OP42
46	Op Amp	AD811
47	Op Amp	AD845
48	Op Amp	AD845
50	Op Amp	AD844
51	Op Amp	AD844
52	Op Amp	AD707
102	Op Amp	AD845
106	Op Amp	AD711
107	Op Amp	AD711
108	Op Amp	AD845
110	Op Amp	AD845
118	Op Amp	AD711
120	Op Amp	AD844
141	Op Amp	AD711
142	Op Amp	AD845
143	Op Amp	AD845
146	Op Amp	OP42
148	Op Amp	AD549
149	Op Amp	AD811
153	Op Amp	OP177
161	Op Amp	AD820
163	Op Amp	AD820
165	Op Amp	AD820
170	Op Amp	None
180	Op Amp	OP177
183	Op Amp	OP177
184	Op Amp	OP177
220	Op Amp, Chopper, Fast	OP177
230	Op Amp, Chopper	OP177
231	Op Amp, Chopper	OP177
232	Op Amp, Chopper	OP177
234	Op Amp, Chopper	OP177
235	Op Amp, Chopper	OP177
260	Op Amp, Chopper, Noninverting	OP177

Model #	Description	Closest Equivalent
261	Op Amp, Chopper, Noninverting	OP177
272	Isolation Amp	AD210
273	Isolation Amp	AD210
274	Isolation Amp	284J
275	Isolation Amp	289 or AD210
276	Isolation Amp	AD210
279	Isolation Amp	AD202
280	Isolation Amp	281
282	Isolation Amp	AD2
283	Isolation Amp	AD202
285	Isolation Amp	AD210
287	Isolation Amp	AD210
288	Isolation Amp	AD204
293	Isolation Amp	AD210
294	Isolation Amp	AD210
301	Op Amp, Electrometer	310 (Module)
302	Op Amp, Electrometer	310 (Module)
311	Op Amp, Electrometer	AD549
350	Comparator, Single	AD790
422	Op Amp	AD734
424	Op Amp	AD534
425	Op Amp	AD534
426	Multiplier	AD534
427	Op Amp	AD534
428	Op Amp	AD534
432	Multiplier	AD534
433	Multiplier	AD538
434	Multiplier	AD734
435	Multiplier	AD734
436	Multiplier	AD534
441	RMS-to-Dig. Conv	AD737
450	Voltage-to-Frequency Converter	AD652
452	Voltage-to-Frequency Converter	AD650
454	Voltage-to-Frequency Converter	AD650
456	Voltage-to-Frequency Converter	AD650
602	Instrumentation Amp	AD524
603	Instrumentation Amp	AD524
605	Instrumentation Amp	AD524
606	Instrumentation Amp	AD626
610	Instrumentation Amp	AD625



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
752	Log Amp	759
903	Power Supply	None
905	Power Supply	None
906	Power Supply	None
907	Power Supply	None
908	Power Supply	None
909	Power Supply	None
921	Power Supply	None
922	Power Supply	None
926	Power Supply	None
927	Power Supply	None
928	Power Supply	922
931	Power Supply	None
932	Power Supply	None
933	Power Supply	None
935	Power Supply	None
942	Power Supply	None
944	Power Supply	None
945	Power Supply	None
946	Power Supply	None
947	Oscillator	None
948	Power Supply	None
950	Manifold	None
951	Power Supply	None
952	Power Supply	970
953	Power Supply	966
956	Power Supply	None
959	Power Supply	960
964	Power Supply	None
967	Power Supply	None
967	Power Supply	None
971	Power Supply	None
972	Power Supply	None
973	Power Supply	975
974	Power Supply	None
4150	Op Amp	AD844
8771	D / A, DAC1108	AD568
101	Op Amp	AD845
103	Op Amp	AD845
104	Op Amp	AD845

Model #	Description	Closest Equivalent
105	Op Amp	AD711
109	Op Amp	AD845
111	Op Amp	AD711
114	Op Amp	AD707
115	Op Amp	AD549
116	Op Amp	AD844
117	Op Amp	Contact Tech Support
119	Op Amp	AD711
144	Op Amp	AD711
147	Op Amp	AD845
160	Op Amp	171 @ Intronics
1S10/1S20	RDC	AD2S80A / AD2S82A
1S14/1S24/1S44/1S64/1S74	RDC	AD2S83
1S40	R/D, 14-Bit	AD2S80A
1S60	R/D, 16-Bit, RDC	AD2S80A
1S6061	RDC	AD2S80A / AD2S82A
211	Op Amp, Chopper, Fast	OP27
2B30	Signal Conditioner	2B31
2B35	Signal Conditioner	None
2B56	Signal Conditioner	None
2S20	Signal Conditioner	AD2S80A / AD2S82A
2S50	LVDT-to-Digital Converter	None
2S54	LVDT-to-Digital Converter	None
2S56	LVDT-to-Digital Converter	None
2S58	LVDT-to-Digital Converter	None
3B10	Signal Conditioner	3B30
3B11	Signal Conditioner	3B31
3B12	Signal Conditioner	3B32
3B13	Signal Conditioner	None
3B14	Signal Conditioner	3B34
3B15	Signal Conditioner	3B34
3B19	Signal Conditioner	3B39
3B40-A-00	Signal Conditioner	None
43B40-A-04	Signal Conditioner	None
3B40-A-05	Signal Conditioner	None
401	Op Amp	Contact Tech Support
423	Multiplier	Contact Tech Support
4B01	Signal Conditioner	None
4B02	Signal Conditioner	None
4B10	Signal Conditioner	None



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent	Model #	Description	Closest Equivalent
4B11	Signal Conditioner	None	AC1317	Connector	None
4B12	Signal Conditioner	None	AC1320	Board	None
4B20	Signal Conditioner	None	AC1322	Board	None
4B21	Signal Conditioner	None	AC1325	Socket	None
4B22	Signal Conditioner	None	AC1326	Cable	None
5S70	Transformer	AD2S75	AC1334	Signal Conditioner	None
5S72	Transformer	AD2S75	AC1340-C	Cord	None
604	Instrumentation Amp	AD524	AC1343	Signal Conditioner	None
916	Power Supply	None	AC1347	Signal Conditioner	None
917	Power Supply	None	AC1348	Signal Conditioner	None
918	Power Supply	None	AC1349	Signal Conditioner	None
957	Power Supply	958	AC1366A	Assembly	None
961	Power Supply	962	AC1366B	Assembly	None
963	Power Supply	964	AC1545	Card	None
977E	Power Supply, 220 VAC	977 (110 VAC)	AC1577	Card	None
AC1003	Socket	AC1010	AC1579	Card	None
AC1008	Socket	None	AC1580	Card	None
AC1022	Socket	None	AC1581	Card	None
AC1023	Socket	None	AC1584-3	Card	None
AC1034	Socket	None	AC1586	Card	None
AC1037	Socket	None	AC1901	Card	None
AC1038	Socket	AD1023	AC1911	Software	None
AC1041	Socket	None	AC1912	Software	None
AC1045	Socket	None	AC1913	Software	None
AC1047	Socket	None	AC2630	Connector	None
AC1049	Socket	None	AC5005	Card, AD1175	None
AC1051	Socket	None	AD101A	Op Amp	AD711
AC1053	Socket	None	AD108/208/308	Op Amp	OP77
AC1054	Socket	None	AD108A/208A/308A	Op Amp	OP77
AC1061	Socket	None	AD1145	D/A, 16-Bit, 10 $\mu$ s, Hybrid	AD7710
AC1212	Socket	None	AD1147	D/A, 14-Bit, +5/+10 V	AD669
AC1215	Socket	None	AD1148	D/A, 14-Bit, +5/+10 V, with Dual 8-Bit	AD669
AC1216	Socket	None	AD1175K	A/D, 22-Bit	AD7730
AC1217	Socket	None	AD1321	Pin Driver	AD1324
AC1218	Socket	None	AD1322	Pin Driver	AD1324
AC1227	Socket	None	AD1330	A/D	AD1378-AD1382
AC1303	Power Supply	None	AD1332	DAS Module	AD7892
AC1304	Power Supply	None	AD1334	DAS Module	AD7892
AC1305	Power Supply	None	AD1378	A/D, 16-Bit	AD677
AC1306	Power Supply	None	AD1812	Audio Subsystem, 16-Bit with AD1845	AD1816



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent	Model #	Description	Closest Equivalent
AD1815	Audio Subsystem, 16-Bit with AD1845	AD1821	AD2S66	R/D, 16-Bit, Hybrid Digital/Resolver	None
AD1846	Codec, 16-Bit, Stereo	AD1845	AD2S93	R/D, 14-Bit, Universal LVDT to Digital	None
AD1848	Codec, 16-Bit, Stereo	AD1845	AD301A	Op Amp	AD829
AD1885	A/D, Dual 18-Bit, Audio	AD1877	AD345	Pin Driver	AD1324
AD1B60	A/D, 16-Bit, Signal Cond.	AD280	AD351	Comparator, Single	AD790
AD2001	Panel Meter, 3 1/2 Digit, DC Powered	None	AD3554	Op Amp	AD811
AD2002	Panel Meter, 3 1/2 Digit, DC Powered	None	AD367	A/D, 15-Bit, Integrating, w/PGA	None
AD2003	Panel Meter, 3 1/2 Digit, DC Powered	None	AD368	A/D, 12-Bit, w/PGA 50 KSPS	AD7892
AD2004	Panel Meter, 4 1/2 Digit, DC Powered	None	AD369	A/D, 12-Bit, w/PGA, 50 KSPS	AD7892
AD2008	Panel Meter, 4 1/2 Digit, AC Input, Floating	None	AD370	D/A, Single, 12-Bit, Low Power	AD767
AD2009	Panel Meter, 3 1/2 Digit, AC Powered	None	AD371	D/A, Single, 12-Bit, Low Power	AD767
AD2016	Panel Meter, 3 1/2 Digit, AC Powered	None	AD376	D/A, 16-Bit, 10 $\mu$ s, Hybrid	AD1376
AD201A	Op Amp	AD829	AD381	Op Amp	AD744
AD2020	A/D, 3 Digit BCD, +5 V DC Power	None	AD382	Op Amp	AD744/AD845
AD2021	Panel Meter, 3 1/2 Digit, DC Powered	None	AD386	T/H, 16-Bit, SHA	AD1154
AD2022	Panel Meter, 3 1/2 Digit, DC Powered	None	AD3860	D/A, Single, 12-Bit	AD567
AD2023	Panel Meter, 3 1/2 Digit, DC Powered	None	AD392	D/A, Quad, 12-Bit	AD664
AD2024	Panel Meter, 4 1/2 Digit, +5 V Supply	None	AD395/883B	D/A, Quad 12-Bit	AD394/883B
AD2025	Panel Meter, 4 3/4 Digit, +5 V Supply	None	AD501	Op Amp	AD711
AD2027	Panel Meter, 4 1/2 Digit, +5 V Supply	None	AD5010	D/A	AD9000
AD2028	Panel Meter, 4 3/4 Digit, +5 V Supply	None	AD502	Op Amp	AD711
AD2033	Panel Meter, 3 1/2 Digit, True RMS	None	AD504	Op Amp	OP77
AD2036	Panel Meter, 3 1/2 Digit, 6 Channel	None	AD505	Op Amp	AD843
AD2037	Panel Meter, 3 1/2 Digit, 6 Channel	None	AD507	Op Amp	AD843
AD2038	Panel Meter, 3 1/2 Digit, 6 Channel	None	AD508	Op Amp	OP77
AD2040	Panel Meter	None	AD509	Op Amp	AD843
AD2050	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD511	Op Amp	AD711
AD2051	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD513	Op Amp	AD711
AD2060	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD514	Op Amp	AD711
AD2061	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD516	Op Amp	AD711
AD2070	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD518	Op Amp	AD817
AD2071	Panel Meter, 3 1/2 Digit, $\mu$ P-Based	None	AD520	Instrumentation Amp	AD524
AD22150	Sensor, Hall Effect	None	AD5201	A/D, 12-Bit	AD9221
AD235	Line Driver/Receiver	Contact Marketing	AD5202	A/D, 12-Bit	AD9221
AD293	Isolation Amp	None	AD5204	A/D, 12-Bit	AD9221
AD294	Isolation Amp	AD210	AD5205	A/D, 12-Bit	AD9221
AD295	Isolation Amp	AD210	AD5211	A/D, 12-Bit	AD9221
AD2S34	R/D, Dual	None	AD5214	A/D, 12-Bit	AD9221
AD2S46	R/D, 16-Bit, Resolver/Digital	None	AD523	Op Amp	AD549
AD2S65	R/D, 14-Bit, Hybrid Digital/Resolver	None	AD5240	A/D 12-Bit	AD ADC85



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
AD530	Multiplier	AD633
AD531	Multiplier	AD534
AD539JCHIPS	Multiplier	None
AD542JCHIPS	Op Amp, Low Bias Current	None
AD547SCHIPS	Op Amp, Low Bias Current	None
AD559	D/A, 8-Bit, High Speed	AD558
AD575	A/D, 10-Bit, A/D Encoder	AD573
AD583	Sample & Hold Amp	AD585
AD6012	D/A, 12-Bit	AD655A
AD6020	D/A	AD9000
AD612	Instrumentation Amp	AD524
AD614	Instrumentation Amp	AD524
AD644SCHIPS	Op Amp, Die	None
AD647JCHIPS	Op Amp, Die	None
AD651	Voltage-to-Frequency Converter	AD652
AD673JP	A/D, 8-Bit	AD673JN/JD
AD682	T/H, Dual	AD684
AD689	Reference, 1.2 V	AD589
AD7001	Communications, GSM I/O Port	None
AD7003	Communications, GSM I/O Port	None
AD7004	Communications, GSM I/O Port	None
AD7005	Communications, GSM I/O Port	None
AD708AH	Op Amp, Precision	AD708AQ
AD708BH	Op Amp, Precision	AD708BQ
AD708JCHIPS	Op Amp, Die	None
AD7110	D/A, LOGDAC, 88.5 dB Range	AD7111A
AD7115	D/A, LOGDAC	AD7111
AD7118	D/A, LOGDAC, 88.5 dB Range	AD7111A
AD7341	Filter, Transmit, Voiceband Antialiasing	None
AD7371	Filter, Receive, Voiceband Antialiasing	None
AD743JCHIPS	Op Amp, Low Bias Current	None
AD745JCHIPS	Op Amp, Low Bias Current	None
AD745SQ	Op Amp, Low Bias Current	AD743SQ/883B
AD745SQ/883B	D/A, Single, 10-Bit, Inverted R2R	AD743SQ/883B
AD7501SE/883B	Multiplexer	None
AD7502SE/883B	Multiplexer	None
AD75062	Instrumentation Amp, Dual	None
AD75068	Instrumentation Amp, Octal	None
AD7506SE/883B	Multiplexer	None
AD7506TE/883B	Multiplexer	None

Model #	Description	Closest Equivalent
AD7506TQ/883B	Multiplexer	None
AD7507SE/883B	Multiplexer	None
AD7507SQ/883B	Multiplexer	None
AD7507TE/883B	Multiplexer	None
AD7507TQ/883B	Multiplexer	None
AD7511DISE/883B	Switch	5962-86716032A
AD7513	Switch	ADG201A
AD7516	Switch	AD7510DI
AD7519	Switch	None
AD7520SQ/883B	D/A, Single, 10-Bit, Inverted R2R	None
AD7520TQ/883B	D/A, Single, 10-Bit, Inverted R2R	None
AD7520UQ/883B	D/A, Single, 10-Bit, Inverted R2R	None
AD7521	D/A, Single, 10-Bit, Inverted R2R	AD7541A
AD7527	D/A, Single, 10-Bit, Inverted R2R	AD7548
AD7534SQ/883B	D/A, Single, 14-Bit, Inverted R2R	None
AD7535TQ/883B	D/A, Single, 14-Bit, Inverted R2R	None
AD7536SQ/883B	D/A, Single, 14-Bit, Inverted R2R	None
AD7544	D/A, Single, 10-Bit, Inverted R2R	AD7548
AD7546	D/A, 16-Bit, V <sub>OUT</sub> DAC	AD7846
AD7550	A/D, 13-Bit, Quad Slope	AD280
AD7552	A/D, 13-Bit, Quad Slope	AD280
AD7555	A/D, 13-Bit, Quad Slope	AD280
AD7560	Power, Supply, DC-to-DC Converter	None
AD7570	A/D, 10-Bit, 40 $\mu$ s	AD7579/AD7580
AD7571	A/D, 10-Bit, Plus Sign, 80 $\mu$ s	AD7579/AD7580
AD7576SE/883B	A/D, 8-Bit, w/T/H, 200 KSPS	AD7574SE/883B
AD7576TE/883B	A/D, 8-Bit, w/T/H, 200 KSPS	AD7574SE/883B
AD7583	A/D, ADC	AD7880 +MUX
AD7591DI	Switch	ADG221
AD7620	A/D, 6-Bit, High Speed ADC	AD9057
AD7672BE03	A/D, 12-Bit, 3 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD7672TE05	A/D, 12-Bit, 5 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD7672TE10	A/D, 12-Bit, 10 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD7672TE10/883B	A/D, 12-Bit, 5 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD7672UE05	A/D, 12-Bit, 3 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD7672UE10	A/D, 12-Bit, 5 $\mu$ s, No V <sub>REF</sub>	AD7572A-SE05
AD770	A/D, 8-Bit, 200 MSPS ADC	AD9054
AD776	A/D, 12/16-Bit, 400 kHz/100 kHz	AD7721, 22, AD977
AD7772	A/D, 12-Bit, 10 $\mu$ s, Serial I/O	AD7870
AD7773	Codec, 10-Bit, 3 $\mu$ s A/D, 8-Bit D/A	ADSC901



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent	Model #	Description	Closest Equivalent
AD7773B	Codec, 10-Bit, 3 $\mu$ s A/D, 8-Bit, D/A	AD5C901	AD9702	D/A, Triple, 4-Bit, ECL or TTL, 125 MSPS	ADV7120
AD7774	Codec, 8-Bit, 4 Channel 3.6 $\mu$ s	None	AD9703	D/A, 8-Bit, Composite Video Function	AD9720
AD7775	Codec, 10-Bit, 3 $\mu$ s A/D, 8-Bit, D/A	None	AD9712	D/A, 12-Bit, DDS DAC, 100 MSPS, ECL LOG	
AD7775A	Codec, 10-Bit, 3 $\mu$ s A/D, 8-Bit, D/A	None	AD9713	D/A, 12-Bit, DDS DAC, 100 MSPS, TTL LOG	
AD7828UE/883B	A/D, AD7828UE/883B	None	AD973	A/D, 18-Bit	AD9220
AD7848	D/A, Single, 12-Bit, Complete	None	AD9768SE	D/A, Single, 8-Bit, 100 MSPS	AD9768SD
AD7882	D/A, 16-Bit, 300 KSPS	AD7722	AD9950	DDS 32-Bit, no D/A	AD9850
AD797ACHIPS	Op Amp, Precision	None	AD9955	DDS 32-Bit, no D/A	AD9850
AD801	Op Amp	AD711	ADADC816	D/A 10-Bit, 800 ns	AD7821
AD878	A/D, 14-Bit, 2.2 MSPS	AD9243	ADC10Z	A/D 10-Bit	AD574A
AD890	Hard Disk Servo/Data Chan Process	None	ADC1100	A/D, 3 1/2 Digit BCD, Dual Slope	AD1170
AD892	Hard Disk, 30 Mb/s Peak Detector	None	ADC1102	A/D 12-Bit	AD7870
AD896	Hard Disk, 7th Order Bessel	None	ADC1103	A/D 12-Bit	AD7572A
AD897	Hard Disk, 32 MBit/s Peak Detector	None	ADC1105	A/D, Dual Slope ADC	
AD899	Hard Disk, 32 MBit/s	None	ADC1109	A/D	AD7572A
AD9000JE	A/D, 6-Bit, 50>75 MSPS	AD9000JD	ADC1111	A/D	AD574A
AD9000SE	A/D, 6-Bit, 50>75 MSPS	AD9000SD	ADC1121	A/D 12-Bit	AD7880
AD9000SE/883B	A/D, 6-Bit, 50>75 MSPS	AD9000SD/883B	ADC1123	A/D 12-Bit	AD7880
AD9006	A/D, 6-Bit, 470 MSPS	None	ADC1133	A/D 12-Bit	AD574A
AD9011	A/D	AD9002	ADC1171	A/D, 4 1/2 Digit BCD, Dual Slope	AD1170
AD9016	A/D, 6-Bit, 470 MSPS	None	ADC12QL	A/D 12-Bit	AD7578
AD9028	A/D, 8-Bit, 300 MSPS, ECL	AD9054	ADC12QM	A/D 12-Bit	AD574A, AD1674
AD9038	A/D, 8-Bit, 300 MSPS, ECL	AD9054	ADC12QU	A/D 12-Bit	AD574A
AD9300TE/883B	Multiplexer, 4:1 Video	AD9300KP or TQ/883B	ADC12QZ	A/D 12-Bit	AD574A
AD9500TE	Time Delay Generator	AD9500TQ/883B	ADC14I	A/D, 14-Bit, Dual Slope	AD1170
AD9500TE/883	Time Delay Generator	AD9500TQ/883B	ADC16Q	A/D 16-Bit	AD676
AD9501SE/883B	Time Delay Generator	AD9501JP	ADC170	A/D	
AD9505	Time Delay Generator	AD9501JP	ADC8S	A/D 2 Digit BCD	AD673
AD9521	Log Amp, 250 MHz	AD606	ADC908	A/D 8-Bit	AD7574
AD9611	Op Amp	None	ADC910	A/D 10-Bit	AD573 or AD7776
AD9615	Op Amp	None	ADDAC71/72	D/A, 16-Bit, DAC	AD669
AD9620	Op Amp	AD9630	ADDAC85-LDCBII		
AD96685CHIPS	Comparator, Single	None			
AD9685	Comparator, Single	AD96685	ADDAC85-LDCBIV	D/A, 12-Bit	ADDAC80-CBI-I
AD9686	Comparator, Single	AD8598			
AD9687	Comparator, Dual	AD96687	ADDS2100-AICEFKIT	D/A, 12-Bit	ADDAC80-CBI-V
AD9688	A/D, 4-Bit, 200 MHz, ECL	AD9002	ADDS2101-ICEFKIT	Emulator	



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent	Model #	Description	Closest Equivalent
ADDS2101-ICEPKIT	Emulator	None	ADSP-3202	DSP, 32-Bit, Chipset	None
ADDS2111-CEPKIT	Emulator	None	ADSP-3210	DSP, 64-Bit, Chipset	None
ADDS2150A	Emulator	ADDS-2100A-ICE	ADSP-3211	DSP, 64-Bit, Chipset	None
ADDS2150AE	Emulator	ADDS-2100A-ICE	ADSP-3212	DSP, 64-Bit, Floating Pt.	None
ADDS2160	Evaluation Board	None	ADSP-3220	DSP, 64-Bit, Chipset	None
ADG200	Switch	None	ADSP-3221	DSP, 64-Bit, Chipset	None
ADG201	Switch	ADG201A	ADSP-3222	DSP, 64-Bit, Floating Pt.	None
ADLH0032	Op Amp	AD843	ADT10	Temp Controller	None
ADLH0032G/CG	Op Amp	AD843	ADT11	Temp Sensor	None
ADLH0033	Op Amp	None	ADT18	Temp Sensor	TMP17
ADLH0033G/CG	Op Amp	AD9630	ADT19	Temp Sensor	TMP17
ADM205L	Drivers/Receivers	None	ADT41	Temp Sensor	TMP35
ADM235L	Drivers/Receivers	None	ADT42	Temp Sensor	TMP35
ADM501	Op Amp	AD843	ADT43	Temp Sensor	TMP35
ADP501	Op Amp	AD711	ADV7121	D/A, Video DAC	ADV7122
ADSHC85	T/H	AD585	ADV7141	D/A, Video DAC	ADV471
ADSHM5	T/H	AD9100	ADV7146	D/A, Video DAC	None
ADSP-1008A	DSP, 8 x 8 Mult/Accum	None	ADV7148	D/A, Video DAC	None
ADSP-1009A	DSP, 12 x 12 Mult/Acc	None	ADV7150	D/A, RAM DAC	ADV7150L
ADSP-1010A	DSP, 16 x 16 Mult/Accum	None	API1620/1718	R/D, Instrument	None
ADSP-1010B	DSP, 16 x 16 Mult/Accum	None	BDM1615/16/17	BCD Converter	None
ADSP-1012A	DSP, 12 x 12 Multiplier	None	BUF03BJ/883C	Buffer Amplifier	None
ADSP-1016A	DSP, 16 x 16 Multiplier	None	CAB-12	Cable	None
ADSP-1024A	DSP, 24 x 24 Multiplier	None	CAB-14	Cable	None
ADSP-1080A	DSP, 8 x 8 Multiplier	None	CAV-1040	A/D, 10-Bit, 40 MSPS	AD9040, CAV-1040A
ADSP-1081A	DSP, 8 x 8 Multiplier	None	CAV-1210	A/D, 12-Bit, 10 MSPS	CAV-1220
ADSP-1101	DSP, Dual, 16 x 18 Multiplier	None	CAV-0920	A/D, 9-Bit, 20 MSPS	AD9020/9060
ADSP-1110A	DSP, 16 x 16 Mult/Accum	None	CAV-1020	A/D, 10-Bit, 20 MSPS	AD9020/9060
ADSP-1401	DSP, Program. Sequencer	None	CAV-1202	A/D, 12-Bit, 2 MSPS	AD9220
ADSP-1402	DSP, Program. Sequencer	None	CAV-1205	A/D, 12-Bit, 5 MSPS	AD9220
ADSP-1410	DSP, Address Generator	None	CMP01GRBC	Comparator, Single	CMP02NBC
ADSP-2100AZ	DSP, 16-Bit, Microprocessor	None	CMP01NBC	Comparator, Single	CMP02NBC
ADSP-2102	DSP, 16-Bit, Microprocessor	None	CMP02CJ	Comparator, Dual	None
ADSP-21msp50A	DSP, Mixed Signal	ADSP-21msp58/59	CMP05BJ	Comparator, Single	None
ADSP-21msp55A	DSP, Mixed Signal	ADSP-21msp58/59	CMP05CJ	Comparator, Single	None
ADSP-21msp56A	DSP, Mixed Signal	ADSP-21msp58/59	CMP05CJ/883C	Comparator, Single	None
ADSP-28msp01	DSP, 16-Bit, Datacom, for V.32	ADmsp58	CMP05FJ	Comparator, Single	None
ADSP-28msp02	DSP, 16-Bit, Voiceband Signal Port	ADmsp58	CMP05GBC	Comparator, Single	None
ADSP-3128A	DSP, Register File	None	CMP05GJ	Comparator, Single	CMP05GP
ADSP-3201	DSP, 32-Bit, Chipset	None	CMP08	Comparator, Single	AD96685



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
CMP404GBC	Comparator, Quad	None
CTS020001PC	Test System, CTS Component	None
DAC01	D/A, 6-Bit, D/A, $V_{OUT}$	AD767, AD7224
DAC02	D/A, 10-Bit, D/A, $V_{OUT}$	DAC210
DAC03	D/A, 10-Bit, D/A, $V_{OUT}$	AD7245A
DAC04	D/A, 10-Bit, D/A, $V_{OUT}$	None
DAC05	D/A, 10-Bit, D/A, $V_{OUT}$	AD7245A
DAC06	D/A, 10-Bit, D/A, $V_{OUT}$	AD7245A
DAC1009	D/A	AD767
DAC100DDQ7	D/A, 10-Bit, High Speed	DAC100CCQ7
DAC10BX	D/A, 10-Bit, High Speed	DAC10FX
DAC10CX	D/A, 10-Bit, High Speed	DAC10GX
DAC10DF	D/A, 10-Bit, High Speed	AD568
DAC10H	D/A	None
DAC10Z	D/A	None
DAC1106	D/A	AD568
DAC1108	D/A	AD568
DAC1112	D/A	AD667
DAC1117	D/A	None
DAC1118	D/A	AD767
DAC1122	D/A	AD7541A
DAC1125	D/A	AD7533
DAC1132	D/A	AD667
DAC1137	D/A	None
DAC12M	D/A	AD7845
DAC12QS	D/A	AD667
DAC12QS	D/A	AD667
DAC12QZ	D/A	AD667
DAC1420	D/A, 4 to 20 mA	AD420
DAC1422	D/A, 4 to 20 mA	AD420
DAC14QM	D/A, 14-Bit	AD768
DAC16QM	D/A, 16-Bit	AD760
DAC20	D/A, BCD Multiplying DAC	None
DAC206	D/A	AD7224
DAC208	D/A, 8-Bit	DAC210
DAC8012	D/A, 12-Bit, Multiplying DAC	AD7545A
DAC8212	D/A, Dual 12-Bit	DAC8221
DAS1128	DAS Module	AD7892
DAS1150	DAS Module	AD7891

Model #	Description	Closest Equivalent
DAS1151	DAS Module	AD7892
DAS1155	DAS Module	AD7892
DAS1156	DAS Module	AD7892
DB-32	Panel	PWR-01
DRC1605/06/07	D/R	None
DRC1705/1706	D/R	None
DRC1745	D/R	None
DRC1746	D/R	None
DRC1765/66	D/R	None
DSC1605/06/07	D/R	None
DSC1705/1706	D/R	AD2S90
DSC1765/66	D/R	AD2S90
DTM1716/17	D/R	None
FS-125	Op Amp Module	Contact Tech Support
GAP01	Op Amp, Analog Sig. Proc. Subsys	None
HAS0802	A/D, 8-Bit	None
HAS1409	A/D, 14-Bit	AD9243
HDD1015	D/A, 10-Bit, High Speed	None
HDD1409	D/A, 14-Bit, High Speed	None
HDG-0805	D/A, 8-Bit, High Speed	ADV7128
HDC Series	D/A	None
HDH0802	D/A, 8-Bit, High Speed	ADV7128
HDH1003	D/A, 10-Bit, High Speed	AD9731AN
HDH1205	D/A, 12-Bit, High Speed	None
HDL3805	D/A, Triple, 8-Bit, High Speed	ADV453/ADV478
HDL3806	D/A, Triple, 8-Bit, High Speed	ADV453/ADV478
HDM1210	D/A, 10-Bit, High Speed	AD9713BAN
HDS-1025	D/A, 10-Bit, High Speed	AD9721JN
HDS0810E	D/A, 8-Bit, High Speed	ADV7128
HDS0820	D/A, 8-Bit, High Speed	None
HDS1015E	D/A, 10-Bit, High Speed	None
HDS1250	D/A, 12-Bit, High Speed	HDS1250A
HOS100AH/SH	Buffer	AD9630
HOS200	Buffer	None
HTC0500	T/H	None
IPA1751	Preamp	HTC0300A
IPA1764	Preamp	None
IRDC1730	R/D, 12-Bit	AD2S90
IRDC1731	R/D, 12-Bit	AD2S90



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent	Model #	Description	Closest Equivalent
IRDC1733	R/D, 12-Bit	AD2S90	OP05GTBC	Op Amp, Precision	OP07NBC
IVS100	Card	AD2S80A/AD2S82A	OP05NBC	Op Amp, Precision	OP07NBC
LENS-10	DPM Lens	None	OP05NTBC	Op Amp, Precision	OP07NBC
LENS-14	DPM Lens	None	OP06EZ	Op Amp, Precision	OP77, OP06GJ
LENS-17	DPM Lens	None	OP06FZ	Op Amp, Precision	OP77, OP06GJ
LENS-2	DPM Lens	None	OP06GBC	Op Amp, Precision	OP77NBC
LENS-26	DPM Lens	None	OP06GRBC	Op Amp, Precision	OP77NBC
LIU01	Serial Data Receiver	Exar's XRT5650/81/83	OP06GTBC	Op Amp, Precision	OP77NBC
MAH0801	A/D 8-Bit	ADV7128	OP06GZ	Op Amp, Precision	OP97FZ
MAH1001	A/D 10-Bit	AD9057	OP06NBC	Op Amp, Precision	OP77NBC
MAS0801	A/D 8-Bit	AD9057	OP06NTBC	Op Amp, Precision	OP77NBC
MAS1001	A/D 10-Bit	AD9057	OP07EY	Op Amp, Precision	OP07EZ
MAS1202	A/D 12-Bit	AD9057	OP08	Op Amp, Precision	OP97
MAT02BRC/883C	Transistor	MAT02AH/883C	OP100049Y	Op Amp, Precision	None
MAT03ARC/883C	Transistor	MAT03AH/883C	OP16GS	Op Amp, Low Bias Current	OP42GS
MATV0811	A/D 8-Bit	AD876	OP260GBC	Op Amp, High Speed	None
MATV0816	A/D 8-Bit	AD876	OP260GBCG:69	Op Amp, High Speed	None
MATV0820	A/D 8-Bit	AD876	OP271GBC	Op Amp, Precision	None
MC11794	R/D	AD2S80A/82A	OP290GBC	Op Amp, Low Power	None
MDA FAMILY	D/A, Module	None	OP32AJ	Op Amp, Low Power	OP186
MDAF	D/A 10-Bit, Fast	None	OP32BRC/883C	Op Amp, Low Power	OP97ARC/883C
MDD Series	D/A	None	OP32GBC	Op Amp, Low Power	OP90GBC
MDH FAMILY	D/A	None	OP32GRBC	Op Amp, Low Power	OP90GBC
MDMS FAMILY	D/A	None	OP32NBC	Op Amp, Low Power	OP90GBC
MDS FAMILY	D/A	None	OP41NBC	Op Amp, Low Bias Current	None
MDSL FAMILY	D/A	None	OP420GBC	Op Amp, Precision	None
MOD1005/20	A/D 10-Bit	AD876	OP420GRBC	Op Amp, Precision	None
MOD1205	A/D 12-Bit	AD9220	OP420NBC	Op Amp, Precision	None
MPD15	Power Supply	902-2	OP43AJ	Op Amp, Precision	None
MPD5	Power Supply	None	OP43AJ/883C	Op Amp, Low Bias Current	OP41EJ
MUX200	Multiplexer	None	OP43BJ	Op Amp, Low Bias Current	OP41EJ
OA-125	Op Amp Module	None	OP43BJ/883C	Op Amp, Low Bias Current	OP41EJ
OMC-204	Macsym Component	Contact Tech Support	OP43NBC	Op Amp, Low Bias Current	None
OMC-205	Macsym Component	None	OP482GBC	Op Amp, Low Bias Current	None
OMC-217	Macsym Component	None	OP50GBC	Op Amp	None
OP04DY	Op Amp, Precision	OP04CY	OP61	Op Amp	None
OP05/883C	Op Amp, Precision	OP05AZ/883C	OP64ARC/883C	Op Amp, High Speed	AD829
OP05GBC	Op Amp, Precision	OP07NBC	OP64ARCMDA	Op Amp, High Speed	AD818
OP05GRBC	Op Amp, Precision	OP07NBC			AD818



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
OP64GBC	Op Amp, High Speed	None
OP80BJ	Op Amp, Low Bias Current	OP80GP
OP80BJ/883C	Op Amp, Low Bias Current	OP80GP
OP80EJ	Op Amp, Low Bias Current	OP80GP
OP80FJ	Op Amp, Low Bias Current	OP80GP
OP90ARC/883C	Op Amp, Low Power	OP97ARC/883C
PGA	Op Amp	None
PM1008	Op Amp	OP97
PM108ARC/883C	Op Amp, Low Bias Current	OP97
PM111GBC	Comparator, Single	AD8598
PM111GTBC	Comparator, Single	AD8598
PM111NTBC	Comparator, Single	AD8598
PM139NIBC	Comparator, Quad	AD8564
PM148	Op Amp	OP413
PM155ARC/883C	Op Amp, Low Bias Current	OP42ARC/883C
PM156AZ/883C	Op Amp, Low Bias Current	OP42AZ/883C
PM208	Op Amp	PM1008
PM211	Comparator, Single	AD8598
PM219	Comparator, Dual	AD8562
PM239	Comparator, Quad	AD8562
PM248	Op Amp	OP413
PM248	Op Amp	OP413
PM308	Op Amp	PM1008
PM4136RC/883C	Op Amp	OP09AY/883C
PWR-05	Power Supply	None
QMX01	μMAC Subassembly	Azonixs (978-670-6300)
QMX01H	μMAC Subassembly	Azonixs (978-670-6300)
QMX02	μMAC Subassembly	Azonixs (978-670-6300)
QMX03	μMAC Subassembly	Azonixs (978-670-6300)
QMX04	μMAC Subassembly	Azonixs (978-670-6300)
QMX05	μMAC Subassembly	Azonixs (978-670-6300)
QMX06	μMAC Subassembly	Azonixs (978-670-6300)
QMX2AO	μMAC Subassembly	Azonixs (978-670-6300)
RDC1725	R/D	AD2S90
RDC1726	R/D	AD2S90
RDC1728	R/D	AD2S90
RDC1740448	R/D	RDC1740444 or AD2S90
RDC1740548	R/D	RDC1740444 or AD2S90
RDC1741	R/D	AD2S90
RDC1742443	R/D	AD2S90

Model #	Description	Closest Equivalent
RDC1742444	R/D	RDC1742414 or AD2S90
RDC1742448	R/D	RDC1742418 or AD2S90
RDC1742543	R/D	RDC1742413 or AD2S90
RDC1742544	R/D	RDC1742414 or AD2S90
RDC1742548	R/D	RDC1742418 or AD2S90
RDC1767	R/D	AD2S90
RDC1768	R/D	AD2S90
RPT85	PCM Repeaters	RPT86
RPT87	PCM Repeaters	RPT86
RSTC1621	Transformer	None
RTI-1200	DAS Board	RTI711 Series
RTI-1201	DAS Board	RTI711 Series
RTI-1202	DAS Board	RTI711 Series
RTI-1230	DAS Board	None
RTI-1231	DAS Board	None
RTI-1232	DAS Board	None
RTI-1240	DAS Board	None
RTI-1241	DAS Board	None
RTI-1242	DAS Board	None
RTI-1243	DAS Board	None
RTI-1250	DAS Board	None
RTI-1251	DAS Board	None
RTI-1252	DAS Board	None
RTI-1270	DAS Board	None
RTI-1271	DAS Board	None
RTI-204	DAS Board	None
RTI-205	DAS Board	None
RTI-217	DAS Board	None
RTI-220	DAS Board	None
RTI-600	VME Bus	None
RTI-700	DAS Board	None
RTI-870	DAS Board	None
RTI-870	DAS Board	None
RTI-980	DAS Board	None
RTM Series	Transformer	None
SAC1763	Synchro Converter	None
SBCD1752/53/56/57 SDC		Computer Conversions
9570-72,75,76,79	Transform.	Magnetico
SCDX1623	Synchro Converter	None
SCM1677	Synchro Converter	None



# SUBSTITUTION GUIDE

## 3. Obsolete Generics and All Models

Model #	Description	Closest Equivalent
SDC1602/3/4	R/D	AD2S82A
SDC1700	R/D	AD2S82A
SDC1702	R/D	AD2S82A
SDC1703	R/D	AD2S82A
SDC1704	R/D	AD2S82A
SDC1711	R/D	AD2S82A
SDC1721	R/D	AD2S82A
SDC1725	R/D	AD2S82A
SDC1726	R/D	AD2S82A
SDC1728	R/D	AD2S82A
SDC1742442	R/D	SDC1742412 or AD2S82A
SDC1767	R/D	AD2S82A
SDC1768	R/D	AD2S90
SERDEX	Digital to ASCII Converter	None
SHA1114	T/H	AD585
SHA1134	T/H	None
SHA1A	T/H	AD585
SHA2A	T/H	AD781
SHA3	T/H	AD585
SHA4	T/H	AD585
SHA5	T/H	None
SHA6	T/H	None
SHC85	T/H	BB SHC85
SHM5/SHM5K	T/H	None
SMP81	T/H	None
SPA1695	Synchro Converter, Amplifier	None
SSCT1621	Synchro Converter, Transformer	None
SSCT1622/23	Synchro Converter, Transformer	None
SSCT1625	Synchro Converter, Transformer	None
SSCT1626	Synchro Converter, Transformer	None
SSCT1627	Synchro Converter, Transformer	None
SSM2013P	VGA	SSM2018TP
SSM2014P	VGA	SSM2018TP
SSM2015P	Preamp, Microphone	SSM2017P, SSM2166
SSM2016P	Preamp, Audio	SSM2017P
SSM2044P	Voltage Controlled Filter	None
SSM2045P	Voltage Controlled Filter	None
SSM2047P	Voltage Controlled Filter	None
SSM2100	Log Amp	Harris ICL8048 / ICL8049

Model #	Description	Closest Equivalent
SSM2131	Op Amp	OP42GP
SSM2134P	Op Amp	OP176GP
STB-CHR	Panel	None
STB03	Board	None
STM Series	Synchro Converter, Transformer	None
STM1680	Synchro Converter, Transformer	None
STM1683	Synchro Converter, Transformer	None
SW-ACQ-6B	System	None
SW-C-205-D	System	None
SW-TP-205-D	System	None
SW01BQ	Switch	SW01FQ
SW02	Switch	ADG412
THC FAMILY	T/H	HTC0300A
THS FAMILY	T/H	HTC0300A
TSL1612	Synchro Converter	None
µMAC Series	µMAC	Azonixs (978-670-6300)



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
440	RMS to Dig. Conv	442	AD737	AD1679	A/D, 14-Bit, 10 $\mu$ s	AD679	None
901	Power Supply	902-2	None	AD1779	A/D, 14-Bit, 10 $\mu$ s	AD779	None
902	Power Supply	902-2	None	AD1849JP	Codec, 16-Bit, Stereo Codec	AD1849KP	None
904	Power Supply	902-2	None	AD206	Isolation Amp	AD215	None
915	Power Supply	902-2	None	AD230	Line Driver/Receiver	ADM230L	
965	Power Supply	940	None	AD231	Line Driver/Receiver	ADM231L	
976	Power Supply	977	None	AD232	Line Driver/Receiver	ADM232L	
2S80	RDC	AD2S80A	9/30/96	AD233	Line Driver/Receiver	ADM233L	
2S82	RDC	AD2S82A	9/30/96	AD234	Line Driver/Receiver	ADM234L	
5962-87591013X	AD7572SE05/883B	5962-87591043X		AD236	Line Driver/Receiver	ADM236L	
5962-87591023X	AD7572SQ05/883B	5962-87591053X		AD237	Line Driver/Receiver	ADM237L	
5962-8759102LX	AD7572SQ12/883B	5962-8759105LX		AD238	Line Driver/Receiver	ADM238L	
5962-8770001EA	AD7524SQ/883B	5962-8770002EA	4/30/97	AD239	Line Driver/Receiver	ADM239L	
5962-87701012A	AD7524SE/883B	5962-87701022A	4/30/97	AD241	Line Driver/Receiver	ADM241L	
5962-87702012X	AD7545GUE/883B	5962-87702042X	4/30/97	AD2701SD/883B	Reference	8503001YA	AD2701LD
5962-87702022X	AD7545SE/883B	5962-87702042X		AD2701UD/883B	Reference	8503002YA	AD2701LD
5962-87702032X	AD7528UE/883B	5962-87702042X		AD362	T/H, 16-Bit, Accurate S/H	8503006YC	AD2701LD
5962-87702052A	5962-877020	None		AD389BDB	SHA	AD1362	None
5962-8770205RA	5962-877020	None		AD395SD	D/A, Quad 12-Bit	AD389BD	None
5962-87702062A	A/D, PM7545BRCMDA	5962-877020	None	AD395TD	D/A, Quad 12-Bit	AD395JD/KD	None
5962-8770206RA	A/D, PM7545BRMDA	5962-877020	None	AD396SD	D/A, Quad 12-Bit	AD395JD/KD	None
5962-87762012X	AD7575SE/883B	5962-88650022X		AD396TD	D/A, Quad 12-Bit	AD396JD	None
5962-8776201VX	AD7575SQ/883B	5962-8776202VX		AD396TD/883B	D/A, Quad 12-Bit	AD396KD	None
5962-87762022X	AD7575TE/883B	5962-88650022X		AD420AN	D/A, 16-Bit, Serial 4-20 mA	AD396KD	None
5962-8776302LX	A/D, AD7537TQ/883B	5962-877630	None	AD420AR	D/A, 16-Bit, Serial 4-20 mA	AD420AN-32	None
5962-8866301LX	A/D, AD7228TQ/883B	5962-886630	None	AD503	Op Amp	AD420AR-32	None
5962-89481012X	A/D, AD7541ASE/883B	5962-894810	None	AD506	Op Amp	AD711	AD711
5962-8948101VX	A/D, AD7541ASQ/883B	5962-894810	None	AD510	Op Amp	AD711	AD711
5962-89481032A	A/D, PM7541AAXMDA	5962-894810	None	AD512	Op Amp	AD515A	AD549
5962-8948103VA	A/D, PM7541ABRCMDA	5962-894810	None	AD515	Op Amp	AD515AJH	AD549
5962-8948104VA	A/D, PM7541ABXMDA	5962-894810	None	AD515AJH/+	Op Amp, Low Bias Current	AD515AKH	AD549
5962-8962901LX	A/D, AD7569SE/883B	5962-896290	None	AD515AKH/+	Op Amp, Low Bias Current	AD517KH	OP177
5962-8965701LX	A/D, AD7547SQ/883B	5962-896570	None	AD517KH/+	Op Amp, Low Bias Current	AD517LH	OP177
AC1211	Socket	AC1213	None	AD517SH	Op Amp, Low Bias Current	AD517SH/883B	OP177
AD1111/211/311	Comparator, Single	PM111	None	AD521KD/+	Instrumentation Amp	AD521KD	None
AD1139	A/D 18-Bit, Low Power, 70 $\mu$ s	AD1139J	AD790	AD524ACHIPS	Instrumentation Amp	AD524SCHIPS	None
AD1408	D/A, 8-Bit	DAC1408A	AD760				
AD1508	D/A, 8-Bit	DAC1408A	AD558				
AD1678	A/D, 12-Bit, 10 $\mu$ s	AD678	AD558				



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
AD524AD/+	Instrumentation Amp	AD524AD	None	AD590LH/+	Temp Sensor	AD590LH/883B	None
AD524BD/+	Instrumentation Amp	AD524BD	None	AD590MF/+	Temp Sensor	AD590MF/883B	None
AD524CD/+	Instrumentation Amp	AD524CD	None	AD624AD/+	Instrumentation Amp	AD624AD	None
AD528	Op Amp	AD825	AD711	AD625CD/+	Instrumentation Amp	AD625CD	None
AD532JH/+	Multiplier	AD532JH	None	AD625JN/+	Instrumentation Amp	AD625JN	None
AD532KCHIPS	Multiplier	AD532SCHIPS	None	AD632AH/+	Multiplier	AD632AH	None
AD532KH/+	Multiplier	AD532KH	None	AD632BH/+	Multiplier	AD632BH	None
AD534JCHIPS	Multiplier	AD534KCHIPS	None	AD637JCHIPS	RMS to DC Converter	AD637SSCHIPS	None
AD534SE	Multiplier	AD534SE/883B	None	AD644KH	Op Amp, Low Bias Current	AD644LH	None
AD534TE	Multiplier	AD534TE/883B	None	AD645SCHIPS	Op Amp, Low Bias Current	AD645ACHIPS	None
AD536AJD/+	RMS to DC Converter	AD536AJD	None	AD645SH	Op Amp, Low Bias Current	AD645SH/883B	None
AD536AJH/+	RMS to DC Converter	AD536AJH	None	AD6461	Quadrature Demodulator	Cancelled	None
AD536AKD/+	RMS to DC Converter	AD536AKD	None	AD6462	A/D, Analog Front End	Cancelled	None
AD536ASE	RMS to DC Converter	AD536ASE/883	None	AD647SH	Op Amp, Low Bias Current	AD647KH	None
AD540	Op Amp	AD711	AD711	AD648AQ/+	Op Amp, Low Bias Current	AD648AQ	None
AD542SH/883B	Op Amp, Low Bias Current	AD547SH/883B	None	AD648TQ	Op Amp, Low Bias Current	AD648TQ/883B	None
AD544SH/883B	Op Amp, Low Bias Current	AD547SH/883B	None	AD674A	A/D 12-Bit	AD674B	None
AD545AJH/+	Op Amp, Low Bias Current	AD545AJH	None	AD704JCHIPS	Op Amp, Low Bias Current	OP497GBC	None
AD545AMH/+	Op Amp, Low Bias Current	AD545AMH	None	AD704TQ	Op Amp, Low Bias Current	AD704TQ/883B	None
AD545JH	Op Amp, Low Bias Current	AD545AJH	None	AD705BQ	Op Amp, Low Bias Current	AD705TQ/883B	None
AD545KH	Op Amp, Low Bias Current	AD545AKH	None	AD705JCHIPS	Op Amp, Low Bias Current	OP97GBC	None
AD545LH	Op Amp, Low Bias Current	AD545ALH	None	AD705TQ	Op Amp, Low Bias Current	AD705TQ/883B	None
AD545MH	Op Amp, Low Bias Current	AD545AMH	None	AD706JCHIPS	Op Amp, Low Bias Current	OP297GBC	None
AD547KH/+	Op Amp, Low Bias Current	AD547KH	None	AD711TE/883B	Log Amp	AD711UE/883B	None
AD548AR	Op Amp, Low Bias Current	AD548BR	None	AD711TQ/883B	Log Amp	AD711UQ/883B	None
AD548BQ	Op Amp, Low Bias Current	AD548CQ	None	AD711AH/+	Op Amp, Low Bias Current	AD711AH	None
AD548CH	Op Amp, Low Bias Current	AD548BH	None	AD712BH	Op Amp, Low Bias Current	AD712CH	None
AD548SH	Op Amp, Low Bias Current	AD548AH	None	AD712JCHIPS	Op Amp, Low Bias Current	AD712ACHIPS	None
AD548SH/883B	Op Amp, Low Bias Current	AD548AH	None	AD713JCHIPS	Op Amp, Low Bias Current	AD713SCHIPS	None
AD549KH/+	Op Amp, Low Bias Current	AD549KH	None	AD7225TE/883B	D/A, Quad, 8-Bit	5962-87802012A	None
AD549LH/+	Op Amp, Low Bias Current	AD549LH	None	AD7225TQ/883B	D/A, Quad, 8-Bit	5962-87802012A	None
AD565	D/A, 12-Bit	AD565A	None	AD7225UE/883B	D/A, Quad, 8-Bit	5962-87802012A	None
AD566	D/A, 12-Bit	AD566A	None	AD7225UQ/883B	D/A, Quad, 8-Bit	5962-87802012A	None
AD578Z	A/D, 12-Bit, 1 $\mu$ s	AD578	None	AD7226TE/883B	D/A, Quad, 8-Bit	5962-878020	None
AD579Z	A/D, 12-Bit, 1 $\mu$ s	AD579	None	AD7226TQ/883B	D/A, Quad, 8-Bit	5962-878020	None
AD590JF/+	Temp Sensor	AD590JF/883B	None	AD7228TE/883B	D/A, Octal, 8-Bit	5962-88663013X	None
AD590JH/+	Temp Sensor	AD590JH/883B	None	AD7228UE/883B	D/A, Octal, 8-Bit	5962-88663013X	None
AD590KF/+	Temp Sensor	AD590KF/883B	None	AD7228UQ/883B	D/A, Octal, 8-Bit	5962-88663023X	None
AD590KH/+	Temp Sensor	AD590KH/883B	None	AD7228UQ/883B	D/A, Octal, 8-Bit	5962-88663023X	None
AD590LF/+	Temp Sensor	AD590LF/883B	None	AD7237SQ/883B	D/A, Dual, 12-Bit	AD7237TQ/883B	None



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent
AD7243SQ/883B	D/A, Single, 12-Bit	5962-932040	None
AD7245SE/883B	D/A, Single, 12-Bit, Complete	AD7245ATE/883B	None
AD7245SQ/883B	D/A, Single, 12-Bit, Complete	AD7245ATQ/883B	None
AD7247SQ/883B	D/A, Dual, 12-Bit	AD7247TQ/883B	None
AD7248TQ/883B	D/A, Single, 12-Bit, Complete	AD7248ATQ/883B	None
AD7350	DDS 32-Bit	AD9830	None
AD7351	DDS 32-Bit	AD9831	None
AD741KH/+	Op Amp, Low Bias Current	AD741KH	None
AD741SH	Op Amp, Low Bias Current	AD741SH/883B	None
AD743AN	Op Amp, Low Bias Current	AD743JN	None
AD743AQ	Op Amp, Low Bias Current	AD743BQ	None
AD743AR-16	Op Amp, Low Bias Current	AD743JR-16	None
AD743AR-16-REEL	Op Amp, Low Bias Current	AD743JR-16-R	None
AD743AR-16-REEL7	Op Amp, Low Bias Current	AD743JR-16-R	None
AD743SQ	Op Amp, Low Bias Current	AD743SQ/883B	None
AD745AQ	Op Amp, Low Bias Current	AD745AN	None
AD745AR-16	Op Amp, Low Bias Current	AD745JR-16	None
AD745BQ	Op Amp, Low Bias Current	AD745AN	None
AD745KN	Op Amp, Low Bias Current	AD745JN	None
AD75080JN	Controller Chip	AD75080N	None
AD7511DITQ/883B	Switch	AD7511DISQ/883B	None
		5962-9073104-MEA	
AD7512DISE/883B	Switch	AD7512DITE/883B	None
AD7522SQ/883B	D/A, Single, 10-Bit	AD7522UQ/883B	None
AD7522TQ/883B	D/A, Single, 10-Bit	AD7522UQ/883B	None
AD7522UD/883B	D/A, Single, 10-Bit	AD7522UQ/883B	None
AD7530	DDS 32-Bit	AD9830	None
AD7531	DDS 32-Bit	AD9831	None
AD7533SE/883B	D/A, Single, 10-Bit	AD7533TE/883B	None
AD7533SQ/883B	D/A, Single, 10-Bit	AD7533UQ/883B	None
AD7533TQ/883B	D/A, Single, 10-Bit	AD7533UQ/883B	None
AD7533UE/883B	D/A, Single, 10-Bit	AD7533TE/883B	None
AD7541SQ/883B	D/A, Single, 12-Bit	5962-8948102VX	None
AD7541TQ/883B	D/A, Single, 12-Bit	5962-8948102VX	None
AD7542SQ/883B	D/A, Single, 12-Bit	AD7542TQ/883B	None
AD7543SE/883B	D/A, Single, 12-Bit	AD7543TE/883B	None
AD7543TQ/883B	D/A, Single, 12-Bit	AD7543GTQ/883B	None
AD7545ATE/883B	D/A, Single, 12-Bit	5962-87702042X	None
AD7545ATQ/883B	D/A, Single, 12-Bit	5962-8770204RX	None
AD7545AUE/883B	D/A, Single, 12-Bit	5962-87702042X	None

Model #	Description	Pin for Pin Replacement	Closest Equivalent
AD7545AUQ/883B	D/A, Single, 12-Bit	5962-8770204RX	None
AD7545GUQ/883B	D/A, Single, 12-Bit	5962-8770204RX	None
AD7547SE/883B	D/A, Dual, 12-Bit	5962-89657023A	None
AD7547SQ/883B	D/A, Dual, 12-Bit	5962-8965702LX	None
AD7547TE/883B	D/A, Dual, 12-Bit	5962-89657023A	None
AD7547TQ/883B	D/A, Dual, 12-Bit	5962-8965702LX	None
AD7547UE/883B	D/A, Dual, 12-Bit	5962-89657023A	None
AD7548SE/883B	D/A, Single, 12-Bit	AD7548TE/883B	None
AD7548SQ/883B	D/A, Single, 12-Bit	AD7548TQ/883B	None
AD7569SE/883B	Codec, 8-Bit	5962-896290	None
AD7569TE/883B	Codec, 8-Bit	5962-896290	None
AD7574SQ/883B	A/D, 8-Bit, 15 $\mu$ s, +5 V Rail	AD7574TQ/883B	None
AD7574TE/883B	A/D, 8-Bit, 15 $\mu$ s, +5 V Rail	AD7574SE/883	None
AD7576SQ/883B	A/D, 8-Bit, w/T/H	AD7576TQ/883	None
AD7586	A/D, 12-Bit, 1 $\mu$ s	AD7886	AD9221
AD7672BQ03	A/D, 12-Bit, 3 $\mu$ s, No $V_{REF}$	AD7672BQ05	None
AD7672KN03	A/D, 12-Bit, 3 $\mu$ s, No $V_{REF}$	AD7672KN05	None
AD7672KP03	A/D, 12-Bit, 3 $\mu$ s, No $V_{REF}$	AD7672KP05	None
AD7672TCHIPS	A/D, 12-Bit, 10 $\mu$ s, No $V_{REF}$	AD7672BCHIPS	None
AD7672TQ10/883B	A/D, 12-Bit, 5 $\mu$ s, No $V_{REF}$	5962-896550	None
AD7672UQ05	A/D, 12-Bit, 5 $\mu$ s, No $V_{REF}$	AD7672UQ10	None
AD773	A/D, 10-Bit, 20 MSPS	AD773A	None
AD7821TE/883B	AD7821TE/883B	5962-89518012A	None
AD7821TQ/883B	AD7821TQ/883B	5962-8951801RA	None
AD7824UQ/883B	AD7824UQ/883B	5962-8876402LX	None
AD7828TQ/883B	AD7828TQ/883B	5962-8876403XX	None
AD7837SQ/883B	D/A	5662-945180	None
AD7845TE/883B	D/A	5962-945180	None
AD7874SE/883B	A/D, 12-Bit, 8/ $\mu$ s/CH	5962-915210	None
AD872	A/D, 12-Bit, 10 MSPS	AD872A	AD9220
AD9002AE	A/D, 8-Bit, 125 MSPS	AD9002SE/883B	None
AD9003SM	A/D, 12-Bit, 1 MSPS	AD9003KM	None
AD9003TM	A/D, 12-Bit, 1 MSPS	AD9003KM	None
AD9005	A/D, 12-Bit, 10 MSPS	AD9005B	None
AD9005A	A/D, 12-Bit, 10 MSPS	AD9005B	None
AD9020SE/883B	A/D, 10-Bit, 60 MSPS	AD9020JE	None
AD9020TE/883B	A/D, 10-Bit, 60 MSPS	AD9020JE	None
AD9040	A/D, 10-Bit, 40 MSPS	AD9040A	None
AD9060SE/883B	A/D, 10-Bit, 75 MSPS	AD9060JE	None
AD9060TE/883B	A/D, 10-Bit, 75 MSPS	AD9060KE	None



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
AD9501JQ	Time Delay Generator	AD9501JN	None	ADDS2100AICE	Emulator	ADDS2101EZIC	None
AD9501SQ	Time Delay Generator	AD9501JN	None	ADDS2101ICE	Emulator	ADDS2101EZIC	None
AD9501SQ/883B	Time Delay Generator	AD9501JN	None	ADDS2111ICE	Emulator	ADDS2111EZIC	None
AD9621	Op Amp	AD9631		ADDS2111ICEKIT	Emulator	ADDS2111EZKI	None
AD9622	Op Amp	AD9632		ADG201HSTQ/883B	Switch	5962-867160	None
AD9623	Op Amp	AD9632	None	ADG508ATE/883B	Multiplexer	77052012X(Te	None
AD9624	Op Amp	AD9632	None	ADG508ATQ/883B	Multiplexer	7705201EX(TQ	None
AD9630AQ	Buffer Amplifier	AD9630AN	None	ADG509ATE/883B	Multiplexer	5962-920420	None
AD9630AZ	Buffer Amplifier	AD9630AN	None	ADG527ATE/883B	Multiplexer	5962-897100	None
AD9630SQ/883B	Buffer Amplifier	AD9630AN	None	ADG527ATQ/883B	Multiplexer	5962-897100	None
AD9630SZ	Buffer Amplifier	AD9630AN	None	ADG529ATE/883B	Multiplexer	5962-906350	None
AD9630SZ/883B	Buffer Amplifier	AD9630AN	None	ADG529ATQ/883B	Multiplexer	5962-906350	None
AD96685TE/883B	Comparator, Single	86008042A	None	ADOP07	Op Amp	OP07	None
AD96685TH/883B	Comparator, Single	86008041A	None	ADOP27	Op Amp	OP27	None
AD96687TE/883B	Comparator, Dual	7809032A	None	ADOP37	Op Amp	OP37	None
AD9768JQ	D/A, Single, 8-Bit, 100 MSPS	AD9768JD	None	ADREF01	Reference	REF01	
AD9768SQ	D/A, Single, 8-Bit, 100 MSPS	AD9768SD	None	ADREF02	Reference	REF02	
AD ADC80-10	A/D, 12-Bit	ADADC80-12	None	ADSP-2100JG/+	DSP, 16-Bit, $\mu$ Processor	ADSP-2100-AJG/	None
AD ADC80Z10	A/D, 12-Bit	ADADC80Z12	None	ADSP-2101KP40	DSP, 16-Bit, $\mu$ Processor	ADSP-2101-KP66	
ADADC8410	A/D, 12-Bit	ADADC8412	None	ADSP-2101KP50	DSP, 16-Bit, $\mu$ Processor	ADSP-2101-KP66	
AD ADC84Z10	A/D, 12-Bit	ADADC84Z12	None	ADSP-2105KP50	DSP, 16-Bit, $\mu$ Processor	ADSP-2105KP55	
AD ADC8510	A/D, 12-Bit	ADADC8512	None	ADSP-2111KP52	DSP, 16-Bit, $\mu$ Processor	ADSP-2111KS66	
AD ADC85C10	A/D, 12-Bit	ADADC85C12	None	ADSP-2111KS50	DSP, 16-Bit, $\mu$ Processor	ADSP-2115KS66	
AD ADC85CZ10	A/D, 12-Bit	ADADC85C12	None	ADSP-2111KS55	DSP, 16-Bit, $\mu$ Processor	ADSP-2115KS66	
AD ADC85CZ12	A/D, 12-Bit	ADADC85C12	None	ADXL50EM	Accelerometer Eval Module	ADXLEM50-1	None
AD ADC85510	A/D, 12-Bit	ADADC8512	None	ADXL50HX	Accelerometer	ADXL50SP	None
AD ADC85510B	A/D, 12-Bit	ADADC85S12/8	None	AMP01BX	Instrumentation Amp	AMP01AX	None
AD ADC855Z10	A/D, 12-Bit	ADADC85SZ12	None	AMP01BX/883C	Instrumentation Amp	AMP01AX/883	None
AD ADC855Z10B	A/D, 12-Bit	ADADC85SZ12/	None	AMP05	Instrumentation Amp	AMP05FX	None
AD ADC85Z10	A/D, 12-Bit	ADADC85Z12	None	BUF03BJ	Buffer Amplifier	BUF03AJ	None
ADC912	A/D, 12-Bit	ADC912A	None	BUF03GBC	Buffer Amplifier	BUF03NBC	None
ADDAC100	D/A, 10-Bit, High Speed	DAC100		CMP01CZ	Comparator, Single	CMP01EZ	None
ADDAC85CBII	D/A, 12-Bit	ADDAC80CBII	None	CMP01EJ	Comparator, Single	CMP01CJ, CMP	None
ADDAC85CBIV	D/A, 12-Bit	ADDAC80CBIV	None	CMP01Z	Comparator, Single	CMP01Z/883C	None
ADDAC85CCBIV	D/A, 12-Bit	ADDAC85CBIV	None	CMP02GRBC	Comparator, Dual	CMP02NBC	None
ADDAC85CCCDV	D/A, 12-Bit	ADDAC80CCDV	None	CMP02J/883C	Comparator, Dual	CMP02CJ	None
ADDAC85CCDV	D/A, 12-Bit	ADDAC80CCDV	None	CMP04BY	Comparator, Quad	CMP04BY/883	AD8564
ADDAC85MILCBII	D/A, 12-Bit	ADDAC85CBII/	None	CMP04FY	Comparator, Quad	CMP04BY/883	AD8564
ADDAC85MILCBIV	D/A, 12-Bit	ADDAC85CBIV/	None	CMP04GBC	Comparator, Quad	CMP04NBC	AD8564



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
CMP04GTBC	Comparator, Quad	CMP04NBC	AD8564	DAC1408A-7Q	D/A, 8-Bit, High Speed	DAC1408A-8Q	
CMP04NTBC	Comparator, Quad	CMP04NBC	AD8564	DAC1508A	D/A, 8-Bit, High Speed	DAC1408A	
CMP05BZ	Comparator, Single	CMP05FZ	None	DAC210EX	D/A, 11-Bit, Voltage Output	DAC210GX	None
CMP05CZ	Comparator, Single	CMP05FZ	None	DAC210FX	D/A, 11-Bit, Voltage Output	DAC210GX	None
CMP05CZ/883C	Comparator, Single	CMP05FZ	None	DAC210GBC	D/A, 11-Bit, Voltage Output	DAC210NBC	None
CMP05FP	Comparator, Single	CMP05GP	None	DAC210GRBC	D/A, 11-Bit, Voltage Output	DAC210NBC	None
CMP404AY	Comparator, Quad	5962-899040	AD8564	DAC312BR	D/A, 12-Bit, High Speed	DAC312ER	None
CMP404AY/883C	Comparator, Quad	5962-899040	AD8564	DAC312HR	D/A, 12-Bit, High Speed	DAC312FR	None
CMP404BY	Comparator, Quad	5962-899040	AD8564	DAC312NBC	D/A, 12-Bit, High Speed	DAC312GBC	None
CMP404BY/883C	Comparator, Quad	5962-899040	AD8564	DAC8043HP	D/A, 12-Bit, High Speed	DAC8043FP	None
CMP404BY/883C	Comparator, Quad	CMP404AY/88	AD8564	DAC8143AQ	D/A, 12-Bit, High Speed	DAC8143AQ/8	None
CMP404EY	Comparator, Quad	5962-899040	AD8564	DAC8221AW	D/A, Dual 12-Bit	DAC8221AW/883C	
CMP404FY	Comparator, Quad	5962-899040	AD8564	DAC8221FW	D/A, Dual 12-Bit	DAC8221EW	
AC100AAQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8221HP	D/A, Dual 12-Bit	DAC8221FP	
DAC100AAQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8221HS	D/A, Dual 12-Bit	DAC8221FS	
DAC100ABQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222AW	D/A, Dual 12-Bit	5962-8967201LA	
DAC100ABQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8222AW/883C	D/A, Dual 12-Bit	5962-8967201LA	
DAC100ACQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222HP	D/A, Dual 12-Bit	DAC8222FP	
DAC100ACQ7	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8222HS	D/A, Dual 12-Bit	DAC8222FS	
DAC100ACQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8222HS	D/A, Dual 8-Bit	DAC8222FP	
DAC100BBQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC8222AR	D/A, Dual 8-Bit	DAC8222FP	
DAC100BBQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222AR/883C	D/A, Dual 8-Bit	DAC8222FP	
DAC100BCQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222ER	D/A, Dual 8-Bit	DAC8222FP	
DAC100BCQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC8224AW	D/A, Dual 12-Bit	DAC8248AW/883C	
DDAC100BCQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8248EW	D/A, Dual 12-Bit	DAC8248FW	
DAC100CCQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC8248HP	D/A, Dual 12-Bit	DAC8248FP	
DAC100CCQ6/883C	D/A, 10-Bit, High Speed	DAC100ACQ6/	None	DAC8248HS	D/A, Dual 12-Bit	DAC8248FS	
DAC100CCQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408AT	D/A, Quad 8-Bit	DAC8408AT/883C	
DAC100DDQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408BT	D/A, Quad 8-Bit	5962-89678020A	
DAC100DDQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408HP	D/A, Quad 8-Bit	DAC8408FP	
DAC10GBC	D/A, 10-Bit, High Speed	DAC10NBC	None	DAC8408HPC	D/A, Quad 8-Bit	DAC8408FPC	
DAC10NTBC	D/A, 10-Bit, High Speed	DAC10NBC	None	DAC8408HS	D/A, Quad 8-Bit	DAC8408FS	
DAC1408-69	D/A, 8-Bit, High Speed	DAC1408-8P		DAC8426AR	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-7P	D/A, 8-Bit, High Speed	DAC1408-8P		DAC8426BR	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-7Q	D/A, 8-Bit, High Speed	DAC1408-8Q		DAC8426BR/883C	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-GQ	D/A, 8-Bit, High Speed	DAC1408-8Q		DAC8426ER	D/A, Quad 8-Bit	DAC8426EP	
DAC1408A-6P	D/A, 8-Bit, High Speed	DAC1408A-8P		DAC86CX	COMDAC	DAC86EX	None
DAC1408A-6Q	D/A, 8-Bit, High Speed	DAC1408A-8Q		DAC8800BR	D/A, Octal 8-Bit	DAC8800BR/883C	
DAC1408A-7P	D/A, 8-Bit, High Speed	DAC1408A-8P		DAC8800FR	D/A, Octal 8-Bit	DAC8800FP	None



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
DAC8840FW	D/A, Octal 8-Bit	DAC8840FP	None	OP01GRBC	Op Amp, Precision	OP01GBC	None
DAC8841FW	D/A, Octal 8-Bit	DAC8841FP	None	OP01GTBC	Op Amp, Precision	OP01NBC	None
DAC888AX	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HJ	Op Amp, Precision	OP01CJ	None
DAC888BX	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HP	Op Amp, Precision	OP01CP	None
DAC888BX/883C	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HZ	Op Amp, Precision	OP01CP	None
DAC888GBC	D/A, 8-Bit, DAC08 With Latch	DAC888NBC		OP01J	Op Amp, Precision	OP01J/883C	None
DAS09	DAS I/C	AD8401		OP01NBC	Op Amp, Precision	OP01GBC	None
HAS1002	A/D, 10-Bit	HAS1202AM	None	OP01NTBC	Op Amp, Precision	OP01GBC	None
HAS1202	A/D, 12-Bit	HAS1202A	None	OP02/883C	Op Amp, Precision	OP02AZ/883C	None
HTC0300	T/H	HTC0300A		OP02AJ	Op Amp, Precision	OP02AJ/883C	None
M38510/127A	D/A, 12-Bit	AD7533SQ/883B		OP02AZ	Op Amp, Precision	OP02AZ/883C	None
MacSym Series	System	Ryerson 617-	None	OP02BJ	Op Amp, Precision	OP02AJ/883C	None
MAT01/883C	Transistor	MAT01AH/883C		OP02BJ/883C	Op Amp, Precision	OP02AJ/883C	None
MAT01GH/883C	Transistor	MAT01AH/883C		OP02CZ	Op Amp, Precision	OP02CP	None
MAT02BH	Transistor	MAT02AH		OP02EJ	Op Amp, Precision	OP07DJ	None
MAT02BH/883C	Transistor	MAT02AH/883C		OP02EP	Op Amp, Precision	OP02CP	None
MAT04BY	Transistor	MAT04AY		OP02EP	Op Amp, Precision	OP177GP	None
MUX08AQ	Multiplexer	MUX08AQ/883C		OP02EZ	Op Amp, Precision	OP02CP	None
MUX08BQ	Multiplexer	MUX08BQ/883C		OP02EZ	Op Amp, Precision	OP177GZ	None
MUX08BRC/883C	Multiplexer	5962-877160022A		OP02GBC	Op Amp, Precision	OP02NBC	None
MUX08GBC	Multiplexer	MUX08NBC	None	OP02GRBC	Op Amp, Precision	OP02NBC	None
MUX16AT	Multiplexer	MUX16AT/883C		OP02GTBC	Op Amp, Precision	OP02NBC	None
MUX16BT	Multiplexer	5962-8771702XA		OP02J	Op Amp, Precision	OP02AJ/883C	None
MUX16BT/883C	Multiplexer	5962-8771702XA		OP02J/883C	Op Amp, Precision	OP02AJ/883C	None
MUX16GTBC	Multiplexer	MUX16GBC	None	OP02NTBC	Op Amp, Precision	OP02NBC	None
MUX16NBC	Multiplexer	MUX16GBC	None	OP02Z/883C	Op Amp, Precision	OP02AZ/883C	None
MUX16NTBC	Multiplexer	MUX16GBC	None	OP04AK/883C	Op Amp, Precision	OP04K/883C	OP04AY/883C
MUX24AQ	Multiplexer	5962-8771801EA		OP04GBC	Op Amp, Precision	OP04NBC	None
MUX24AQ/883C	Multiplexer	5962-8771801EA		OP04GTBC	Op Amp, Precision	OP04NBC	None
MUX24BQ	Multiplexer	5962-8771802EA		OP04Y	Op Amp, Precision	OP04AY	None
MUX24BQ/883C	Multiplexer	5962-8771802EA		OP04Y/883C	Op Amp, Precision	OP04AY/883C	None
MUX24NBC	Multiplexer	MUX24GBC	None	OP05AJ	Op Amp, Precision	OP05J/883C	None
MUX24NTBC	Multiplexer	MUX24GBC	None	OP05AJ/883C	Op Amp, Precision	OP05J/883C	None
MUX28GTBC	Multiplexer	MUX24GBC	None	OP05AZ	Op Amp, Precision	OP05CZ	None
MUX28NBC	Multiplexer	MUX24GBC	None	OP05AZ/883C	Op Amp, Precision	OP05CZ	OP07AZ/883C
MUX28NTBC	Multiplexer	MUX24GBC	None	OP05EZ	Op Amp, Precision	OP05EP	None
MUX88	Multiplexer	ADG508F	None	OP05J	Op Amp, Precision	OP05J/883C	None
OP01CZ	Op Amp, Precision	OP01CP	None	OP05Z	Op Amp, Precision	OP05CZ	OP07AZ/883C
OP01GJ	Op Amp, Precision	OP01CJ	None	OP05Z/883C	Op Amp, Precision	OP05CZ	OP07AZ/883C



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
CMP04GTBC	Comparator, Quad	CMP04NBC	AD8564	DAC1408A-7Q	D/A, 8-Bit, High Speed	DAC1408A-8Q	
CMP04NTBC	Comparator, Quad	CMP04NBC	AD8564	DAC1508A	D/A, 8-Bit, High Speed	DAC1408A	
CMP05BZ	Comparator, Single	CMP05FZ	None	DAC210EX	D/A, 11-Bit, Voltage Output	DAC210GX	None
CMP05CZ	Comparator, Single	CMP05FZ	None	DAC210FX	D/A, 11-Bit, Voltage Output	DAC210GX	None
CMP05CZ/883C	Comparator, Single	CMP05FZ	None	DAC210GBC	D/A, 11-Bit, Voltage Output	DAC210NBC	None
CMP05FP	Comparator, Single	CMP05GP	None	DAC210GRBC	D/A, 11-Bit, Voltage Output	DAC210NBC	None
CMP404AY	Comparator, Quad	5962-899040	AD8564	DAC312BR	D/A, 12-Bit, High Speed	DAC312ER	None
CMP404AY/883C	Comparator, Quad	5962-899040	AD8564	DAC312HR	D/A, 12-Bit, High Speed	DAC312FR	None
CMP404BY	Comparator, Quad	5962-899040	AD8564	DAC312NBC	D/A, 12-Bit, High Speed	DAC312GBC	None
CMP404BY/883C	Comparator, Quad	5962-899040	AD8564	DAC8043HP	D/A, 12-Bit, High Speed	DAC8043FP	None
CMP404BY/883C	Comparator, Quad	CMP404AY/88	AD8564	DAC8143AQ	D/A, 12-Bit, High Speed	DAC8143AQ/8	None
CMP404EY	Comparator, Quad	5962-899040	AD8564	DAC8221AW	D/A, Dual 12-Bit	DAC8221AW/883C	
CMP404FY	Comparator, Quad	5962-899040	AD8564	DAC8221FW	D/A, Dual 12-Bit	DAC8221EW	
AC100AAQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8221HP	D/A, Dual 12-Bit	DAC8221FP	
DAC100AAQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8221HS	D/A, Dual 12-Bit	DAC8221FS	
DAC100ABQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222AW	D/A, Dual 12-Bit	5962-8967201LA	
DAC100ABQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8222AW/883C	D/A, Dual 12-Bit	5962-8967201LA	
DAC100ACQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8222HP	D/A, Dual 12-Bit	DAC8222FP	
DAC100ACQ7	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC8222HS	D/A, Dual 12-Bit	DAC8222FS	
DAC100ACQ8	D/A, 10-Bit, High Speed	DAC100BCQ4	None	DAC82228FR	D/A, Dual 8-Bit	DAC82228FP	
DAC100BBQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC82229AR	D/A, Dual 8-Bit	DAC82229FP	
DAC100BBQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC82229AR/883C	D/A, Dual 8-Bit	DAC82229FP	
DAC100BCQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC82229ER	D/A, Dual 8-Bit	DAC82229FP	
DAC100BCQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC8248AW	D/A, Dual 12-Bit	DAC8248AW/883C	
DDAC100BCQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8248EW	D/A, Dual 12-Bit	DAC8248FW	
DAC100CCQ5/883C	D/A, 10-Bit, High Speed	DAC100ACQ5/	None	DAC8248HP	D/A, Dual 12-Bit	DAC8248FP	
DAC100CCQ6/883C	D/A, 10-Bit, High Speed	DAC100ACQ6/	None	DAC8248HS	D/A, Dual 12-Bit	DAC8248FS	
DAC100CCQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408AT	D/A, Quad 8-Bit	DAC8408AT/883C	
DAC100DDQ3	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408BT	D/A, Quad 8-Bit	5962-89678020A	
DAC100DDQ7	D/A, 10-Bit, High Speed	DAC100CCQ3	None	DAC8408HP	D/A, Quad 8-Bit	DAC8408FP	
DAC10GBC	D/A, 10-Bit, High Speed	DAC10NBC	None	DAC8408HPC	D/A, Quad 8-Bit	DAC8408FPC	
DAC10NTBC	D/A, 10-Bit, High Speed	DAC10NBC	None	DAC8408HS	D/A, Quad 8-Bit	DAC8408FS	
DAC1408-69	D/A, 8-Bit, High Speed	DAC1408-8P		DAC8426AR	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-7P	D/A, 8-Bit, High Speed	DAC1408-8P		DAC8426BR/883C	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-7Q	D/A, 8-Bit, High Speed	DAC1408-8Q		DAC8426BR/883C	D/A, Quad 8-Bit	DAC8426AR/883C	
DAC1408-GQ	D/A, 8-Bit, High Speed	DAC1408-8Q		DAC8426ER	D/A, Quad 8-Bit	DAC8426EP	
DAC1408A-6P	D/A, 8-Bit, High Speed	DAC1408A-8P		DAC86CX	COMDAC	DAC86EX	None
DAC1408A-6Q	D/A, 8-Bit, High Speed	DAC1408A-8Q		DAC8800BR	D/A, Octal 8-Bit	DAC8800BR/883C	
DAC1408A-7P	D/A, 8-Bit, High Speed	DAC1408A-8P		DAC8800FR	D/A, Octal 8-Bit	DAC8800FP	None



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
DAC8840FW	D/A, Octal 8-Bit	DAC8840FP	None	OP01GRBC	Op Amp, Precision	OP01GBC	None
DAC8841FW	D/A, Octal 8-Bit	DAC8841FP	None	OP01GTBC	Op Amp, Precision	OP01NBC	None
DAC888AX	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HJ	Op Amp, Precision	OP01CJ	None
DAC888BX	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HP	Op Amp, Precision	OP01CP	None
DAC888BX/883C	D/A, 8-Bit, DAC08 With Latch	DAC888AX/883C		OP01HZ	Op Amp, Precision	OP01CP	None
DAC888GBC	D/A, 8-Bit, DAC08 With Latch	DAC888NBC		OP01IJ	Op Amp, Precision	OP01J/883C	None
DAS09	DAS I/C	AD8401		OP01NBC	Op Amp, Precision	OP01GBC	None
HAS1002	A/D, 10-Bit	HAS1202AM	None	OP01NTBC	Op Amp, Precision	OP01GBC	None
HAS1202	A/D, 12-Bit	HAS1202A	None	OP02/883C	Op Amp, Precision	OP02AZ/883C	None
HTC0300	T/H	HTC0300A		OP02AJ	Op Amp, Precision	OP02AJ/883C	None
M38510/127A	D/A, 12-Bit	AD7533SQ/883B		OP02AZ	Op Amp, Precision	OP02AZ/883C	None
MacSym Series	System	Ryerson 617-	None	OP02BJ	Op Amp, Precision	OP02AJ/883C	None
MAT01/883C	Transistor	MAT01AH/883C		OP02BJ/883C	Op Amp, Precision	OP02AJ/883C	None
MAT01GH/883C	Transistor	MAT01AH/883C		OP02CZ	Op Amp, Precision	OP02CP	None
MAT02BH	Transistor	MAT02AH		OP02EJ	Op Amp, Precision	OP07DJ	None
MAT02BH/883C	Transistor	MAT02AH/883C		OP02EP	Op Amp, Precision	OP02CP	None
MAT04BY	Transistor	MAT04AY		OP02EP	Op Amp, Precision	OPI77GP	None
MUX08AQ	Multiplexer	MUX08AQ/883C		OP02EZ	Op Amp, Precision	OP02CP	None
MUX08BQ	Multiplexer	MUX08BQ/883C		OP02EZ	Op Amp, Precision	OP177GZ	None
MUX08BRC/883C	Multiplexer	5962-877160022A		OP02GBC	Op Amp, Precision	OP02NBC	None
MUX08GBC	Multiplexer	MUX08NBC	None	OP02GRBC	Op Amp, Precision	OP02NBC	None
MUX16AT	Multiplexer	MUX16AT/883C		OP02GTBC	Op Amp, Precision	OP02NBC	None
MUX16BT	Multiplexer	5962-8771702XA		OP02J	Op Amp, Precision	OP02AJ/883C	None
MUX16BT/883C	Multiplexer	5962-8771702XA		OP02J/883C	Op Amp, Precision	OP02AJ/883C	None
MUX16GTBC	Multiplexer	MUX16GBC	None	OP02NTBC	Op Amp, Precision	OP02NBC	None
MUX16NBC	Multiplexer	MUX16GBC	None	OP02Z/883C	Op Amp, Precision	OP02AZ/883C	None
MUX16NTBC	Multiplexer	MUX16GBC	None	OP04AK/883C	Op Amp, Precision	OP04K/883C	OP04AY/883C
MUX24AQ	Multiplexer	5962-8771801EA		OP04GBC	Op Amp, Precision	OP04NBC	None
MUX24AQ/883C	Multiplexer	5962-8771801EA		OP04GTBC	Op Amp, Precision	OP04NBC	None
MUX24BQ	Multiplexer	5962-8771802EA		OP04Y	Op Amp, Precision	OP04AY	None
MUX24BQ/883C	Multiplexer	5962-8771802EA		OP04Y/883C	Op Amp, Precision	OP04AY/883C	None
MUX24NBC	Multiplexer	MUX24GBC	None	OP05AJ	Op Amp, Precision	OP05J/883C	None
MUX24NTBC	Multiplexer	MUX24GBC	None	OP05AJ/883C	Op Amp, Precision	OP05J/883C	None
MUX28GTBC	Multiplexer	MUX24GBC	None	OP05AZ	Op Amp, Precision	OP05CZ	None
MUX28NBC	Multiplexer	MUX24GBC	None	OP05AZ/883C	Op Amp, Precision	OP05CZ	OP07AZ/883C
MUX28NTBC	Multiplexer	MUX24GBC	None	OP05EZ	Op Amp, Precision	OP05EP	None
MUX88	Multiplexer	MUX24GBC	None	OP05J	Op Amp, Precision	OP05J/883C	None
OP01CZ	Op Amp, Precision	ADG508F	None	OP05Z	Op Amp, Precision	OP05CZ	OP07AZ/883C
OP01GJ	Op Amp, Precision	OP01CP	None	OP05Z/883C	Op Amp, Precision	OP05CZ	OP07AZ/883C
		OP01CJ	None				



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
OP06AJ	Op Amp, Precision	OP06BJ/883C	None	OP15GP	Op Amp, Low Bias Current	OP15GZ	None
OP06AJ/883C	Op Amp, Precision	OP06BJ/883C	None	OP15GTBC	Op Amp, Low Bias Current	OP15GBC	None
OP06BJ	Op Amp, Precision	OP06BJ/883C	None	OP15NTBC	Op Amp, Low Bias Current	OP15NBC	None
OP06CJ/883C	Op Amp, Precision	OP06BJ/883C	None	OP160FZ	Op Amp, Low Bias Current	OP160GP	None
OP06CZ/883C	Op Amp, Precision	OP06GJ	None	OP16AZ/883C	Op Amp, Low Bias Current	OP16CZ/883C	None
OP06FJ	Op Amp, Precision	OP06GJ	None	OP16BJ	Op Amp, Low Bias Current	OP16AJ/883C	None
OP07AJ	Op Amp, Precision	OP07AJ/883C	None	OP16BJ/883C	Op Amp, Low Bias Current	OP16AJ/883C	None
OP07GTBC	Op Amp, Precision	OP07NBC	None	OP16BZ/883C	Op Amp, Low Bias Current	5962-895430	None
OP07NTBC	Op Amp, Precision	OP07NBC	None	OP16CJ/883C	Op Amp, Low Bias Current	OP16AJ/883C	None
OP07RC/883C	Op Amp, Precision	5962-820360	None	OP16EJ	Op Amp, Low Bias Current	OP16FJ	OP42EJ
OP09ARC/883C	Op Amp, Precision	OP11ARC/883	None	OP16FP	Op Amp, Low Bias Current	OP16FZ	OP42GP
OP09EP	Op Amp, Precision	OP09FP	None	OP16GBC	Op Amp, Low Bias Current	OP16GRBC	None
OP09FY	Op Amp, Precision	OP09EY	None	OP16GJ	Op Amp, Low Bias Current	OP16FJ	OP42FJ
OP09GBC	Op Amp, Precision	OP09NBC	None	OP16GP	Op Amp, Low Bias Current	OP16FZ	OP42GP
OP09GRBC	Op Amp, Precision	OP09NBC	None	OP16GTBC	Op Amp, Low Bias Current	OP16GRBC	None
OP09GTBC	Op Amp, Precision	OP09NBC	None	OP16NTBC	Op Amp, Low Bias Current	OP16NBC	None
OP09NTBC	Op Amp, Precision	OP09NBC	None	OP177BZ	Op Amp, Low Bias Current	OP177AZ	None
OP10AY	Op Amp, Precision	OP10AY/883C	None	OP177BZ/883C	Op Amp, Low Bias Current	OP177AZ/883	None
OP10Y	Op Amp, Precision	OP10AY/883C	None	OP17AJ	Op Amp, Low Bias Current	5962-877060	OP42AJ/883C
OP10Y/883C	Op Amp, Precision	OP10AY/883C	None	OP17AJ/883C	Op Amp, Low Bias Current	5962-877060	OP42AJ/883C
OP11GRBC	Op Amp, Precision	OP11GBC	None	OP17BJ/883C	Op Amp, Low Bias Current	5962-877060	OP42AJ/883C
OP11GTBC	Op Amp, Precision	OP11GBC	None	OP17BZ	Op Amp, Low Bias Current	5962-877060	OP42AZ
OP11NTBC	Op Amp, Precision	OP11NBC	None	OP17BZ/883C	Op Amp, Low Bias Current	5962-877060	OP42AZ/883C
OP14CJ	Op Amp, Precision	OP14AJ	None	OP17CJ	Op Amp, Low Bias Current	5962-877060	OP42AJ
OP14DJ	Op Amp, Precision	OP14AJ	None	OP17CJ/883C	Op Amp, Low Bias Current	5962-877060	OP42AJ/883C
OP14DP	Op Amp, Precision	OP14CP	None	OP17CZ/883C	Op Amp, Low Bias Current	5962-877060	OP42AZ/883C
OP14DZ	Op Amp, Precision	OP14CZ	None	OP17FJ	Op Amp, Low Bias Current	OP17EJ	None
OP14EJ	Op Amp, Precision	OP14AJ	None	OP17FZ	Op Amp, Low Bias Current	OP17EZ	None
OP14GRBC	Op Amp, Precision	OP14GBC	None	OP17GJ	Op Amp, Low Bias Current	OP17FJ	None
OP14J	Op Amp, Precision	OP14AJ	None	OP17GRBC	Op Amp, Low Bias Current	OP17GBC	None
OP14J/883C	Op Amp, Precision	OP14AJ/883C	None	OP17GTBC	Op Amp, Low Bias Current	OP17GBC	None
OP14NBC	Op Amp, Precision	OP14GBC	None	OP17NBC	Op Amp, Low Bias Current	OP17GBC	None
OP14Z/883C	Op Amp, Precision	OP14AZ/883C	None	OP17NTBC	Op Amp, Low Bias Current	OP17GBC	None
OP150	Op Amp, Precision	AD8531	None	OP200ARC/883C	Op Amp, Precision	5962-8859301M2A	None
OP15BJ	Op Amp, Low Bias Current	OP15AJ	None	OP20BJ	Op Amp, Low Power	OP20HJ	None
OP15BZ	Op Amp, Low Bias Current	OP15AZ	None	OP20BJ/883C	Op Amp, Low Power	OP20HJ	None
OP15BZ/883C	Op Amp, Low Bias Current	OP15AZ/883C	None	OP20BZ	Op Amp, Low Power	OP20FZ	None
OP15EJ	Op Amp, Low Bias Current	OP15AJ	None	OP20CJ	Op Amp, Low Power	OP20HJ	None
OP15FP	Op Amp, Low Bias Current	OP15FZ	None	OP20CZ	Op Amp, Low Power	OP20FZ	None



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
OP20FJ	Op Amp, Low Power	OP20HJ	None	OP221GRBC	Op Amp, Precision	OP221NBC	
OP20GJ	Op Amp, Low Power	OP20HJ	None	OP227BY/883C	Op Amp, Precision	OP227AY/883C	
OP20GRBC	Op Amp, Low Power	OP20GBC	None	OP227CY/883C	Op Amp, Precision	OP227AY/883C	
OP20HZ	Op Amp, Low Power	OP20GZ	None	OP22AJ	Op Amp, Low Power	OP22EJ	None
OP20NBC	Op Amp, Low Power	OP20GBC	None	OP22AJ/883C	Op Amp, Low Power	OP22EJ	None
OP213EZ	Op Amp, Low Bias Current	OP213EP	None	OP22AZ/883C	Op Amp, Low Power	OP22EZ	None
OP215BJ	Op Amp, Low Bias Current	OP215AJ		OP22GBC	Op Amp, Low Power	OP22GRBC	None
OP215BJ/883C	Op Amp, Low Bias Current	OP215AJ/883C		OP22HP	Op Amp, Low Power	OP22HZ	None
OP215BZ	Op Amp, Low Bias Current	OP215BZ/883C		OP22NBC	Op Amp, Low Power	OP22GRBC	None
OP215EJ	Op Amp, Low Bias Current	OP215AJ		OP249AJ	Op Amp, Low Bias Current	5962-9151901MGA	
OP215EP	Op Amp, Low Bias Current	OP215FP		OP249AJ/883C	Op Amp, Low Bias Current	5962-9151901MGA	
OP215ES	Op Amp, Low Bias Current	OP215FS		OP249FJ	Op Amp, Low Bias Current	OP249EJ	None
OP215FJ	Op Amp, Low Bias Current	OP215GJ		OP260AJ	Op Amp, High Speed	5962-9053601GA	
OP215GRBC	Op Amp, Low Bias Current	OP215GBC	None	OP260AJ/883C	Op Amp, High Speed	5962-9053601GA	AD812
OP215NTBC	Op Amp, Low Bias Current	OP215NBC	None	OP260AJMDX	Op Amp, High Speed	5962-905360	
OP21AJ	Op Amp, Low Power	OP21FJ	None	OP260EJ	Op Amp, High Speed	5962-9053601GA	
OP21AZ	Op Amp, Low Power	OP21EZ	None	OP260FJ	Op Amp, High Speed	5962-9053601GA	
OP21AZ/883C	Op Amp, Low Power	OP21EZ	None	OP260FZ	Op Amp, High Speed	OP260EZ	
OP21BJ	Op Amp, Low Power	OP21FJ	None	OP271AZ/883C	Op Amp, Precision	5962-8872102PA	
OP21BZ	Op Amp, Low Power	OP21EZ	None	OP27BJ	Op Amp, Precision	OP27AJ	
OP21EJ	Op Amp, Low Power	OP21GJ	None	OP27BZ/883C	Op Amp, Precision	OP27AZ/883C	
OP21FJ	Op Amp, Low Power	OP21GJ	None	OP27CJ	Op Amp, Precision	OP27AJ	None
OP21FP	Op Amp, Low Power	OP21GP	None	OP290ARC/883C	Op Amp, Low Power	5962-89783012A	
OP21GBC	Op Amp, Low Power	OP21NBC	None	OP297FZ	Op Amp, Low Bias Current	OP297EZ	
OP21GRBC	Op Amp, Low Power	OP21NBC	None	OP32AZ	Op Amp, Low Power	OP32GP	OP90AZ
OP21GTBC	Op Amp, Low Power	OP21NBC	None	OP32AZ/883C	Op Amp, Low Power	OP32GP	OP90AZ/883C
OP21HS	Op Amp, Low Power	OP21HS-REEL	None	OP32BZ	Op Amp, Low Power	OP32GP	OP90AZ
OP220AJ	Op Amp, Precision	OP220AJ/883C		OP32BZ/883C	Op Amp, Low Power	OP32GP	OP90AZ/883C
OP220BJ	Op Amp, Precision	OP220AJ/883C		OP32EP	Op Amp, Low Power	OP32GP	OP90GP
OP220CJ/883C	Op Amp, Precision	OP220GJ	None	OP32EZ	Op Amp, Low Power	OP32GP	OP90EZ
OP220CZ	Op Amp, Precision	OP220AZ	None	OP32FP	Op Amp, Low Power	OP32GP	OP90GP
OP220GBC	Op Amp, Precision	OP220GRBC	None	OP32FZ	Op Amp, Low Power	OP32GP	OP90FZ
OP220GRBC	Op Amp, Precision	OP220NBC	None	OP32GZ	Op Amp, Low Power	OP32GP	OP90FZ
OP220NTBC	Op Amp, Precision	OP220NBC	None	OP37BJ	Op Amp, Precision	OP37AJ/883C	
OP221BJ	Op Amp, Precision	OP221AJ		OP37BJ/883C	Op Amp, Precision	OP37AJ/883C	
OP221CJ	Op Amp, Precision	OP221AJ		OP37BRC/883C	Op Amp, Precision	5962-88537022A	
OP221CZ	Op Amp, Precision	OP221AZ		OP37BZ	Op Amp, Precision	OP37AZ	
OP221GBC	Op Amp, Precision	OP221NBC		OP37CJ	Op Amp, Precision	OP37EJ	
OP221GJ	Op Amp, Precision	OP221AJ/883C		OP37CJ/883C	Op Amp, Precision	OP37AJ/883C	



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
OP37CZ	Op Amp, Precision	OP37AZ		OP97AJ	Op Amp, Low Bias Current	5962-895440	PM1012AJ/883C
OP37FJ	Op Amp, Precision	OP37EJ		OP97AJ/883C	Op Amp, Low Bias Current	5962-895440	PM1012AJ/883C
OP37GBC	Op Amp, Precision	OP37NBC		PM1012AJ	Op Amp, Low Bias Current	PM1012AJ/88	None
OP37GRBC	Op Amp, Precision	OP37NBC		PM1012AZ	Op Amp, Low Bias Current	PM1012GP	PM1012AJ/883C
OP37NTBC	Op Amp, Precision	OP37NBC		PM1012AZ/883C	Op Amp, Low Bias Current	PM1012GP	PM1012AJ/883C
OP41AJ	Op Amp, Low Bias Current	OP41EJ		PM1012GJ	Op Amp, Low Bias Current	PM1012AJ/88	OP97FJ
OP41AJ/883C	Op Amp, Low Bias Current	OP41EJ		PM1012GZ	Op Amp, Low Bias Current	PM1012GP	OP97FZ
OP41BJ	Op Amp, Low Bias Current	OP41EJ		PM108AJ/883C	Op Amp, Low Bias Current	JM38510/101	OP97
OP41BJ/883C	Op Amp, Low Bias Current	OP41EJ		PM108AZ	Op Amp, Low Bias Current	JM38510/101	OP97
OP420BY	Op Amp, Precision	OP420BY/883C		PM108AZ/883C	Op Amp, Low Bias Current	JM38510/101	OP97
OP420CY/883C	Op Amp, Precision	OP420BY/883C		PM108J/883C	Op Amp, Low Bias Current	JM38510/101	OP97
OP420HP	Op Amp, Precision	OP420GP		PM108Z	Op Amp, Low Bias Current	JM38510/101	OP97
OP421BY	Op Amp, Precision	OP421BY/883C		PM108Z/883C	Op Amp, Low Bias Current	JM38510/101	OP97
OP421CY/883C	Op Amp, Precision	OP421BY/883C		PM111J	Comparator, Single	JM38510/103	AD8598
OP421GRBC	Op Amp, Precision	OP421GBC		PM111J/883C	Comparator, Single	JM38510/103	AD8598
OP421HP	Op Amp, Precision	OP421GP		PM111RC/883C	Comparator, Single	5962-868770	AD8598
OP421NBC	Op Amp, Precision	OP421GBC		PM111Y	Comparator, Single	JM38510/103	AD8598
OP43FJ	Op Amp, Low Bias Current	OP43EJ	OP41EJ	PM111Y/883C	Comparator, Single	JM38510/103	AD8598
OP44AJ	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM111Z	Comparator, Single	PM111Z/883C	AD8598
OP44AJ/883C	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM119GTBC	Comparator, Dual	PM119GBC	AD8598
OP44AZ	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM119Y	Comparator, Dual	8601401CA	AD8598
OP44AZ/883C	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM119Y/883C	Comparator, Dual	8601401CA	AD8598
OP44EJ	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM139AY	Comparator, Quad	5962-877390	AD8564
OP44FJ	Op Amp, Low Bias Current	5962-898040	OP44FZ	PM139AY/883C	Comparator, Quad	5962-877390	AD8564
OP471ATC/883C	Op Amp, Precision	5962-88565023A		PM139Y/883C	Comparator, Quad	5962-770080	AD8564
OP497BY	Op Amp, Low Bias Current	OP497BY/883C		PM155AJ/883C	Op Amp, Low Bias Current	JM38510/114	OP42AJ/883C
OP497GY	Op Amp, Low Bias Current	OP497BY/883C		PM155AZ/883C	Op Amp, Low Bias Current	PM155Z/883C	OP42AZ/883C
OP50BY	Op Amp	OP50AY		PM155J	Op Amp, Low Bias Current	PM155AJ	OP42AJ
OP50BY/883C	Op Amp	OP50AY/883C		PM155J/883C	Op Amp, Low Bias Current	JM38510/114	OP42AJ/883C
OP64AJ	Op Amp, High Speed	5962-905350	AD818	PM156J	Op Amp, Low Bias Current	PM156AJ/883	AD711AH
OP64AJ/883C	Op Amp, High Speed	5962-905350	AD818	PM156J/883C	Op Amp, Low Bias Current	PM156AJ/883	AD711AH
OP64EJ	Op Amp, High Speed	5962-905350	AD818	PM156Z/883C	Op Amp, Low Bias Current	JM38510/114	OP42AZ/883C
OP64FJ	Op Amp, High Speed	5962-905350	AD818	PM157AJ/883C	Op Amp, Low Bias Current	PM157J/883C	OP42AJ/883C
OP64FZ	Op Amp, High Speed	OP64EZ	AD818	PM157AZ	Op Amp, Low Bias Current	PM157Z	OP42AZ
OP77BJ/883C	Op Amp, Precision	OP77AJ/883C		PM157AZ/883C	Op Amp, Low Bias Current	JM38510/114	OP42AZ/883C
OP77BZ	Op Amp, Precision	OP77AZ		PM157J	Op Amp, Low Bias Current	JM38510/114	OP42AJ
OP77BZ/883C	Op Amp, Precision	OP77AZ/883C		PM157J/883C	Op Amp, Low Bias Current	JM38510/114	OP42AJ/883C
OP77HP	Op Amp, Precision	OP77FP		PM157Z/883C	Op Amp, Low Bias Current	JM38510/114	OP42AZ/883C
OP90AZ	Op Amp, Low Power	OP90AZ/883C		PM2108	Op Amp	JM38510/101	OP297



# SUBSTITUTION GUIDE

## 4. Obsolete Models, Pin for Pin Replacements Available, but Specifications May Vary

Model #	Description	Pin for Pin Replacement	Closest Equivalent	Model #	Description	Pin for Pin Replacement	Closest Equivalent
PM355	Op Amp	OP15	AD711	REF01GTBC	Reference	REF01NBC	
PM356	Op Amp	OP16	AD711	REF01NNTBC	Reference	REF01NBC	
PM562	D/A, 12-Bit	AD566A		REF01Z	Reference	REF01AZ	
PM7224	D/A, 8-Bit	AD7224		REF01Z/883C	Reference	REF01AZ/883C	
PM7226A	D/A, 8-Bit	AD7226		REF02GTBC	Reference	REF02GBC	
PM741	Op Amp	AD741	None	REF08BZ	Reference	REF08BZ/883C	
PM747**	Op Amp	OP04	None	REF10BJ/883C	Reference	5962-8947902GA	
PM7541	D/A, 12-Bit	AD7541A	None	REF43BJ	Reference	REF43BJ/883C	
PM7542	D/A, 12-Bit	AD7542	None	REF43BZ	Reference	REF43BZ/883C	
PM7543	D/A, 12-Bit	AD7543	None	REF43FJ	Reference	REF43BJ/883C	
PM7548	D/A, 12-Bit	AD7548	None	REF43GJ	Reference	REF43BJ/883C	
PM7574	A/D, 8-Bit	AD7574	None	SDC1742511	R/D	SDC1742411	AD2S82A
PM7628	D/A, 8-Bit	AD7628		SDC1742512	R/D	SDC1742412	AD2S82A
PM7645	D/A, 12-Bit	AD7545A	None	SMP10	T/H	SMP11	None
RDC1740513	R/D	RDC1740413	AD2S90	SMP11AY	T/H	5962-895410	None
RDC1740514	R/D	RDC1740414	AD2S90	SMP11BRC/883C	T/H	5962-895410	None
RDC1740518	R/D	RDC1740418	AD2S90	SMP11BY/883C	T/H	5962-895410	None
RDC1740543	R/D	RDC1740443	AD2S90	SSM2118	VGA	SSM2018	None
RDC1742513	R/D	RDC1742413	AD2S90	SW7510	Switch	AD7510	None
RDC1742514	R/D	RDC1742414	AD2S90	SW7511	Switch	AD7511	None
RDC1742518	R/D	RDC1742418	AD2S90				



Analog Devices provides a wide array of FREE technical publications. These include data sheets, reference manuals and brochures, application notes and guides, and five serial publications: *DSPatch*®, a newsletter about digital signal-processing (applications); *Accelerometer News*, a newsletter on accelerometers; *Signals Newsletter* on signal-conditioning modules; *Communications Direct*, a newsletter on systems and IC solutions for demanding markets; and *Analog Dialogue*, our technical magazine, with in-depth discussions of products, technologies and applications.

In addition to the free publications, a group of technical reference handbooks are available at reasonable cost. Subsystem products are supported with hardware, software and user documentation, at prices related to content.

Brief descriptions of typical technical publications appear below. For copies of any items, to subscribe to any of our free serials or to request any other publications, please contact your nearest sales office or the Analog Devices literature center: phone (781) 329-4700; toll free in U.S., 800-262-5643; or fax (508) 626-0547.

## REFERENCE MANUALS AND CD-ROM *Data Acquisition Products Reference Manuals*

These databooks contain selection guides, data sheets and other useful information about all Analog Devices ICs, hybrids, modules and subsystem components recommended for new designs. In the current series:

*DESIGNER'S REFERENCE MANUAL*—1996. Contains more than 1100 pages of data, including selection trees, selection guides and two-page data sheets on more than 438 generic product types. [G2132-150-5/96]

*DESIGNER'S CD-ROM REFERENCE MANUAL*—1998. Includes Product Selection, Databook, Cross-Reference to competitive part numbers and a Worldwide Sales Directory.

*DSP/MSP PRODUCTS REFERENCE MANUAL*—1995. A 622-page databook on products for digital- and mixed-signal processing. Includes General Information, Signal-Processing Products, Sound-Processing Products (Computer Audio), Sound-Processing Products (Digital Audio), Technical Support, Application Notes. [G1987-75-1/95]

*APPLICATIONS REFERENCE MANUAL*—1993. A 1,344-page collection of 210 application notes, technical articles, and other design tutorials on such topics as audio and video circuits, A/D and D/A conversion, data acquisition and signal conditioning, digital signal processing, sigma-delta conversion, and much more. Cross-indexed by topic, product, subject and application note number. [G1799-40-5/93]

\*Available on worldwide web and Analog Fax retrieval system. DSPatch is a registered trademark of Analog Devices, Inc.

*AMPLIFIER REFERENCE MANUAL*—1992. Data sheets and selection guides to Operational Amplifiers, Comparators, Instrumentation Amplifiers, Isolation Amplifiers, Mixed-Signal ASICs, Power Supplies. [Amp-&Spec-Linear]

*SPECIAL LINEAR REFERENCE MANUAL*—1992. Data sheets and selection guides to Analog Multipliers/Dividers, Signal Compression Components, RMS-to-DC Converters, Mass Storage Components, ATE Components, Special Function Components, Matched Transistors, Temperature Sensors, Signal Conditioning Components, Automotive Components, Digital Signal Processing Products, Mixed-Signal ASICs, Power Supplies. [Amp-&Spec-Linear]

*DATA CONVERTER REFERENCE MANUAL*—1992: Volumes I and II. Data sheets and selection guides on A/D and D/A Converters, V/F and F/V Converters, Synchro/Resolver-to-Digital Converters, Sample/Track-Hold Amplifiers, Switches and Multiplexers, Voltage References, Data-Acquisition Subsystems, Analog I/O Ports, Communications Products, Bus Interface and I/O Products, Application-Specific ICs, Digital Panel Meters, Power Supplies. [G1588-200-10/91]

*MILITARY/AEROSPACE REFERENCE MANUAL*—1994: (in two volumes). Information and data on products available with processing in accordance with MIL-STD-883.

## APPLICATION NOTES

Available individually upon request. Asterisk (\*) indicates available on worldwide web and Analog Fax retrieval system (Faxcode number is listed).

### *Accelerometers*

"Compensating for the 0-g Offset Drift of the ADXL50 Accelerometer" [AN380]  
"Embedded Shock and Temperature Recorder" [AN383]

"Make Wide Temperature Range, Ultralow Drift Accelerometers Using Low Cost Crystal Ovens" [AN385]

"Mounting Considerations for the ADXL Series Accelerometers" [AN379]

"Reducing the Average Power Consumption of Accelerometers" [AN378]

"Understanding Accelerometer Scale Factor and Offset Adjustments" [AN396]

"Using Accelerometers in Low-g Applications" [AN374]

### *A/D Converters*

"AD671 12-Bit, 2 MHz ADC Digitizes CCD Outputs for Imaging Applications" -AN298 [AD671-Apnote]

"AD7672 Converter Delivers 12-Bit 200-kHz Sampling Systems" -AN294 [E1313-15-11/89]

\*"Ask the *Applications Engineer*-2 (Trimming A/Ds and D/As)," AN351 (Faxcode 2384)

"Asynchronous Clock Interfacing with the AD7878" -AN291 [E1334-15-12/89]

"Bipolar Operations with the AD7572" [AD7572-#2]



## A/D Converters (continued)

- "Circuit Delivers for 16-Bit, 150-kHz Multichannel Sampling System" -[AN341]
- "Evaluation Board for the AD7701 / AD7703 Sigma-Delta A/D Converters" -AN368 [E1483-15-12/90]
- "Evaluation Board for the AD7713 24-Bit, Sigma-Delta Converter" [AN367]
- \*\*"Evaluation Board for the AD7730 Strain Gauge Transducer A/D," ANTBd, (Faxcode 2298)
- "Evaluation Board for the AD7890, 12-Bit Serial, Data Acquisition System" [AN413] (Faxcode 2291)
- \*\*"Evaluation Board for the AD9708, AD9760, AD9762, AD9764," AN420 (Faxcode 2296)
- "FIFO Operation and Boundary Conditions in the AD1332 and AD1334" [E1355-15-12/89]
- \*\*"Fundamentals of Sampled Data Systems," AN282 (Faxcode 2352)
- \*\*"High Speed Data Acquisition Using the RTI-2100," AN421 (Faxcode 2297)
- "How to Obtain the Best Performance from the AD7572" [AD7572-#3]
- "Implement Infinite Sample-and-Hold Circuits Using Analog Input/Output Ports" -AN284 [E1359-15-12/89]
- \*\*"Microstepping Drive Circuits for Single Supply Systems," AN323 (Faxcode 2359)
- \*\*"Obtaining the Best Performance from the AD7893 Evaluation Board," AN381
- "Overcoming Converter Nonlinearities with Dither" [AN410] (Faxcode 2289)
- \*\*"Sigma-Delta ADCs and DACs," AN283 (Faxcode 2374)
- "Simple Circuit Provides Ratimetric Reference Levels for AD782x Family of Half-Flash ADCs" -AN299 [E1412-15-7/90]
- \*\*"Using Sigma-Delta Converters-Parts 1 & 2," AN388 (Faxcode 2398)
- "Using the AD771X Family of 24-Bit Sigma-Delta A/D Converters" [AN406]
- \*\*"12 Analog I/O Port Uses AD7549 and 8051 Microcomputer," AN325 (Faxcode 2361)

## Amplifiers

- "A Balanced-Input High-Level Amplifier" [AN112]
- \*\*"A Buffer Amplifier Application Collection," AN40 (Faxcode 2400)
- \*\*"A Collection of Op Amp Applications," AN106 (Faxcode 2315)
- \*\*"A Low Noise Microphone Preamplifier with a Phantom Power Option" [AN242] (Faxcode 2369)
- \*\*"A User's Guide to IC Instrumentation Amplifiers," by Jeffrey Riskin [AN244] (Faxcode 2330)
- \*\*"Accurately Testing Op Amp Settling Time" [AN256] (Faxcode 2340)
- \*\*"Active Feedback Improves Amplifier Phase Accuracy" [AN107] (Faxcode 2316)
- \*\*"Add Programmable Gain, Attenuation" [AN254] (Faxcode 2338)
- "AD9617/AD9618 Current-Feedback Amplifier Macro-Models" -AN259 [AD9617/9618]

- "An IC Amplifier User's Guide to Decoupling, Grounding, and Making Things Go Right for a Change" [AN202] (Faxcode 2367)
- "An Unbalanced Virtual-Ground Summing Amplifier" [AN113]
- \*\*"Ask the *Applications Engineer*-6 (Op Amp Types)," [AN360] (Faxcode 2392)
- \*\*"Careful Design Tames High Speed Op Amps" [AN257] (Faxcode 2341)
- \*\*"Digital Nulling of Precision Op Amps," AB3, (Faxcode 2311)
- "Evaluation Boards for Single, Dual, and Quad Operational Amplifiers" [AN398]
- \*\*"Fast, Rail-to-Rail Operational Amplifiers Ease Design" [AN417] (Faxcode 2294)
- \*\*"Find Op Amp Noise with Spreadsheet" [AN253] (Faxcode 2337)
- "Increasing the Speed of the Output Response of the AD606" [AN405] (Faxcode 2285)
- \*\*"Instrumentation Amplifiers Solve Unusual Design Problems" [AN245] (Faxcode 2331)
- \*\*"Isolation Barrier Precisely Passes Transducer Signals" [AN246] (Faxcode 2332)
- "JFET-Input Amps Are Unrivalled for Speed and Accuracy" [AN108]
- \*\*"Low Voltage Power Supply Watchdog Monitor Circuit" [AN139] (Faxcode 2366)
- \*\*"Noise and Operational Amplifiers Circuits," [AN358] (Faxcode 2390)
- \*\*"Operational Integrators" [AN357] (Faxcode 2389)
- \*\*"Polarity Programmable Peak Detector," AN27 (Faxcode 2347)
- "Replacing Output Clamping Op Amps with Input Clamping Amps" [AN402] (Faxcode 2282)
- \*\*"Settling Time of Operational Amplifiers," [AN359] (Faxcode 2391)
- \*\*"Single Resistor Controls Wein Bridge Oscillator Frequency" [AB112] (Faxcode 2310)
- \*\*"Single Supply Wein Bridge Oscillator," AB111 (Faxcode 2309)
- \*\*"Three High Accuracy, RIAA/IEC, MC and MM Phono Preamplifiers" [AN124] (Faxcode 2311)
- \*\*"Two-Wire 4-20 mA Current Transmitter," AB107 (Faxcode 2308)
- \*\*"Voltage Controlled Amp Covers 55 dB Range" [AN255] (Faxcode 2339)
- \*\*"4-20 mA Digital to Process Current Transmitter," AN21, (Faxcode 2321)

## Analog Signal-Processing and Measurement

- "A Function Generator and Linearization Circuit Using the AD7569 (ADC + DAC)" -AN285 [E1369-15-2/90]
- "Applications of the SSM2120 Dynamic Range Processor" [AN382] (Faxcode 2271)
- "CMOS DACs and Op Amps Combine to Build Programmable Gain Amplifier, Part 1" [AN320A]
- "CMOS DACs and Op Amps Combine to Build Programmable Gain Amplifier, Part 2" [AN320B]



## *Analog Signal-Processing and Measurement (continued)*

- \*\*"Commutating Amp Multiplies Precisely," AN308 (Faxcode 2356)
- \*\*"Low Cost, Low Power Devices for HDSL Applications" [AN414] (Faxcode 2292)
- \*\*"Modem Circuit Techniques Simplify Instrumentation Designs" [AN307] (Faxcode 2355)
- \*\*"Passive and Active Analog Filtering," AN281, (Faxcode 2351)
- "RMS-to-DC Converters Ease Measurement Tasks"-AN268 [E1519-18-4/91] (Faxcode 2370)
- \*\*"Synchronous System Measures  $\mu$ Ohms" [AN306] (Faxcode 2354)
- "Understanding and Applying the AD7341/AD7371 Switched-Capacitor Filters"-AN303 [E1373-15-5/90]

## *Analog & Digital Audio*

- "A Balanced Mute Circuit for Audio Mixing Consoles" [AN122]
- "A Constant-Power 'Pan' Control Circuit for Microphone Audio Mixing" [AN123]
- "A High-Performance Compressor for Wireless Audio Systems" [AN133]
- "A Two-Channel Dynamic Filter Noise Reduction System" [AN125]
- "An Automatic Microphone Mixer" [AN134]
- "Considerations for Mixed Signal Circuit Board Design (How to Design a PCB Layout/Assembly Compatible with the AD1845 and CS4231 Codecs)" [AN404]
- "High Performance Stereo Routing Switcher" [AN121]
- "Interfacing the AD1890/AD1891 to AES/EBU Receivers and Digital Filters" [AN399]
- "Interfacing Two 16-Bit AD1856 (AD1851) Audio DACs with the Philips SAA7220 Digital Filter" [AN207]

## *ATE & Time Domain & Laser Diode Drivers*

- \*\*Programmable Delay ICs Control System Timing," AN261 (Faxcode 2343)
- \*\*Using Digitally Programmable Delay Generators," AN260 (Faxcode 2342)

## *Comparators*

- \*\*Ask the Applications Engineer-5 (High Speed Comparators)" AN352 (Faxcode 2385)

## *D/A Converters*

- "AD7528 Dual 8-Bit CMOS DAC"-AN318 [AD7528-Apnote]
- "Analog Panning Circuits Provide Almost Constant Output-Power" [AN206]
- "An Onboard Digital-to-Analog Converter for Digital Audio Sources" [AN394] (Faxcode 2339)
- "Circuit Applications of the AD7226 Quad CMOS DAC"-AN317 [AD7226]
- \*\*"D/A Converter Generates Hyperbolic Functions," AN23 (Faxcode 2324)
- \*\*"DAC ICs: How Many Bits Is Enough?-" by Robert Adams [AN327] (Faxcode 2264)
- \*\*"DAC08 Applications Collection," AN17 (Faxcode 2318)
- \*\*"Differential and Multiplying D/A Converter Applications," AN19 (Faxcode 2259)
- "Dynamic Performance of CMOS DACs in Modem Applications"-AN329 [E1172-15-2/88]
- "8th Order Programmable Low-Pass Filter Using Dual 12-Bit DACs" [AN209]
- \*\*"Electronic Adjustment Made Easy with the TrimDAC," AN219 (Faxcode 2323)
- "Exploring the AD667 12-Bit Analog Output Port" [AD667]
- "Gain Error and Tempco of CMOS Multiplying DACs" [E630C-5-3/96]
- "Generate 4 Channels of Analog Output Using AD7542 12-Bit D/A Converters and Control the Lot with Only Two Wires"-AN328 [AD7542-#2]
- \*\*"Getting the Most from High Resolution D to A Converters" [AN313] (Faxcode 2263)
- "Interfacing the AD7549 Dual 12-Bit DAC to the MCS-48 and MCS-51 Micro-computer Families" [AD7549]
- "MDAC Circuit Gives Freedom of Choice for Both Output SPAN and DC Offset Voltage" [AN372]
- "Replacing the AD1145 with the AD7846" [E1467-15-11/90]
- \*\*"Single Supply Operation of the DAC08 and DAC20," AB6 (Faxcode 2312)
- "Simple Interface Between D/A Converter and Microcomputer Leads to Programmable Sine-Wave Oscillator" [AD7542] -AN319 (AD7542)
- "The AD7224 DAC Provides Programmable Voltages Over Varying Ranges"—AN316 [AD7224-Apnote]
- "Three-Phase Sine-Wave Generation Using the AD7226 Quad DAC"—AN321 [AD7226-#2]
- "Understanding and Preventing Latchup in CMOS DACs" [AN109]
- "Voltage Adjustment Applications of the DAC8800 TrimDAC®, an Octal 8-Bit D/A Converter" [AN142]

TrimDAC is a registered trademark of Analog Devices, Inc.



## Digital Interface

- "ADM2xxL Family for RS-232 Communications" [AN375]
- \*\*"RS-232 Communications" [AN238] (Faxcode 2329)

## Digital Signal Processing

- \*\*"ADSP-2181 IDMA Interface to Motorola MC68300  $\mu$ P Family" [AN415] (Faxcode 2293)
- "Considerations for Selecting a DSP Processor" [ADSP-2101 vs. TMS320C50] [AN233]
- "Considerations for Selecting a DSP Processor" [ADSP-2115 vs. TMS320C5x] [AN393]
- "Considerations for Selecting a DSP Processor—Why Buy the ADSP-2181? (The Analog Devices ADSP-2181 vs. Texas Instruments & Motorola Fixed-Point DSPs)" [AN400] (Faxcode 2281)
- "Considerations for Selecting a DSP Processor—Why Buy the ADSP-21060? (The Analog Devices ADSP-21060 SHARC® vs. Texas Instruments TMS320C40)" [AN403] (Faxcode 2283)
- "Implement a Cache Memory in Your Word-Slice® System" [E1062-5-3/87]
- \*\*"Loading an ADSP-2101 Program via the Serial Port," AN338 (Faxcode 2378)

## Direct Digital Synthesis

- \*\*"A 125 MHz Discrete Crystal Oscillator for the AD9850 DDS" [AN419] (Faxcode 2295)
- "Amplitude Modulation of the AD9850 Direct Digital Synthesizer" [AN423]
- \*\*"Choosing DACs for Direct Digital Synthesis" [AN237] (Faxcode 2328)

## Multipliers

- \*\*"AD9617 / AD9618 Current-Feedback Amplifier MacroModels" [E1460] [AD9617/9618]
- \*\*"Build Fast VCAs & VCFs with Analog Multipliers," AN309 (Faxcode 2357)
- "OP42 Advanced SPICE Macro-Model" [AN117]
- "OP64 Advanced SPICE Macro-Model" [AN110]
- "OP260 Advanced SPICE Macro-Model" [AN126]
- "OP400 SPICE Macro-Model" [AN120]
- "OP470 SPICE Macro-Model" [AN132]
- "SPICE-Compatible Op Amp Macro-Models" [AN138]
- \*\*"Using the AD834 in DC to 500 MHz Applications" [AN212] (Faxcode 2322)
- \*\*"Video VCAs and Keysers Using the AD834 and AD811" [AN216] (Faxcode 2262)

## Power Management

- "Circuit Design and Applications of the ADM663A / ADM666A Micropower Linear Voltage Regulations" [AN392] (Faxcode 2274)

## Practice

- "An IC Amplifier User's Guide to Decoupling, Grounding and Making Things Go Right for a Change" [AN202] (Faxcode 2367)
- \*\*"Ask the Applications Engineer-9 (Techniques)," AN362 (Faxcode 2394)
- \*\*"Ask the Applications Engineer-10 (PC Board Layout)," AN353 (Faxcode 2386)
- \*\*"Avoiding Passive Component Pitfalls," AN348 (Faxcode 2383)
- \*\*"Considerations for Mixed Signal Circuit Board Design" [AN404] (Faxcode 2284)
- "Electrically Induced Damage to Standard Linear Integrated Circuits: The Most Common Causes and the Associated Fixes to Prevent Reoccurrence" [AN397] (Faxcode 2278)
- "Evaluation Boards for Single, Dual, and Quad Operational Op Amps" [AN398]
- \*\*"Ground(ing) Rules for High Speed Circuits," AN214 (Faxcode 2368)
- \*\*"Grounding for Low and High Frequency Circuits," AN345 (Faxcode 2380)
- "How to Reliably Protect CMOS Circuits Against Power-Supply Overranging" [C1499-15-3/91]
- \*\*"Shielding and Grounding," AN347 (Faxcode 2382)
- \*\*"Understanding Interference-Type Noise," AN346 (Faxcode 2381)

## Resolver (Synchro) to Digital Conversion

- "AC Motor Control Experiments Using the ADMC200-Eval Board" [AN407] (Faxcode 2287)
- \*\*"AC Motor Control Using the AD2S200 Coprocessor" [AN408] (Faxcode 2288)
- \*\*"Circuit Applications of the AD2S90 R/D Converter" [AN230] (Faxcode 2325)
- "Circuit Applications of the 2S81 and 2S80 Resolver-to-Digital Converters" [E1140-20-4/88]
- "Dynamic Characteristics of Tracking Converters" AN264 [E1141-20-12/87]
- \*\*"Speed Measurement and Control with the AD2S83, a "Silicon Tachogenerator" " [AN236]
- "Using the AD2S80A Series Resolver-to-Digital Converter in Control Trans-former Applications" [AN203] (Faxcode 2260)
- "Using the 2S80 Series Resolver-to-Digital Converters with Synchros: Solid-State Scott-T Circuit"-AN252 [E1361-15-12/89] (Faxcode 2336)



## Sample-Holds

- "Applications of the SMP04 and SMP08/SMP18 Quad and Octal Sample-and-Hold Amplifiers" [AN204] (Faxcode 2319)
- "Generate 4 Channels of Analog Output Using AD7542 12-Bit D/A Converters and Control It All with Only Two Wires"-AN328 [AD7542-#2]
- "Implement Infinite Sample-and-Hold Circuits Using Analog Input/Output Ports"-AN284 [E1359-15-12/89]

## Sensors and Signal Conditioning

- \*\*"Acceleration to Frequency Circuits," by Charles Kitchen, Dave Quinn and Steve Sherman [AN411] (Faxcode 2290)
- \*\*"Compensating for the 0 g Offset Drift of the ADXL50" [AN380] (Faxcode 2270)
- "Embedded Shock and Temperature Recorder" [AN383] (Faxcode 2272)
- \*\*"Increasing the Frequency Response of the ADXL50, AN377 (Faxcode 2267)
- "Interfacing the AD22100 Temperature Sensor to a Low Cost, Single Chip Microcontroller" [AN395]
- "Make a Wide Temperature Range, Ultralow Drift Accelerometer Using ADXL50 & Low Cost" [AN385]
- \*\*"Mounting Considerations for the ADXL50" [AN379] (Faxcode 2269)
- \*\*"Reducing the Average Power Consumption of the ADXL50" [AN378] (Faxcode 2268)
- "Thermocouple Signal Conditioning Using the AD594/AD595" [AN369] (Faxcode 2395)
- "Understanding Accelerometer Scale Factor and Offset Adjustments" [AN396]
- "Use of the AD590 Temperature Sensor in a Remote Sensing Application" AN273 [AD590-#2]
- \*\*"Using the ADXL50 Accelerometer in Low g Applications [AN374] (Faxcode 2266)

## Switches and Multiplexers

- "ADG201A/ADG202A and ADG221/ADG222 Performance with Reduced Power Supplies"-AN248 [ADG201A-&-ADG221A]
- "Bandwidth, OFF Isolation, and Crosstalk Performance of the ADG5xxA Multiplexer Series"-AN250 [E1340-15-10/89] (Faxcode 2334)
- \*\*"Protection for the ADG50xA Multiplexer Series," AN249 (Faxcode 2290)
- "RON Modulation in CMOS Switches and Multiplexers; What It Is and How to Predict Its Effect on Signal Distortion"-AN251 [E1470-15-11/90] (Faxcode 2335)

## V/F Converters

- "Analog-to-Digital Conversion Using Voltage-to-Frequency Converters"-AN276 [E994A-7.5-2/87]
- \*\*"Applications for the AD537 Voltage to Frequency Converter" [AN277] (Faxcode 2349)
- \*\*"Operation and Applications of the AD654 IC V to F Converter" [AN278] (Faxcode 2350)
- "Using the AD650 Voltage-to-Frequency Converter as a Frequency-to-Voltage Converter"-AN279 [E1539-15-5/91]

## Video Applications

- "Animation Using the Pixel Read Mask Register of the ADV47x Series of Video RAM-DACs"-AN330 [E1316-15-10/89]
- "Changing Your VGA Design from a 171/176 to an ADV471"-AN331 [E1260-15-1/89]
- \*\*"Design and Layout of a Video Graphics System for Reduced EMI"-AN333 [E1309-15-10/89] (Faxcode 2377)
- "Improved PCB Layouts for Video RAM-DACs Can Use Either PLCC or DIP Package Types"-AN332 [E1225-15-1/89] (Faxcode 2363)
- "Video Formats & Required Load Terminations" [AN205]

## FREE BROCHURES

- Analog. Digital. Solutions.* A 20-page brochure on corporate capabilities. [G1919-50-6/94]
- ASK THE APPLICATIONS ENGINEER-30TH ANNIVERSARY. This free special supplement to *Analog Dialogue* is offered as a bonus to our faithful readers and an encouragement to new readers. We have reprinted here the popular series "Ask the Applications Engineer" from its inception in 1988 through Number 23 in 1996.
- ATE Components. A 20-page brochure describing Analog Devices' capabilities and application-specific standard products for pin electronics in automated testing. Includes descriptions of Delay Generators, Pin Drivers, Active Load, Comparators, Parametric Measurement Components and Level-Setting Components. [G1704-5-8/92]
- The Best of Analog Dialogue, 1967 to 1991.* A 224-page bonus edition containing 52 articles excerpted from the first 25 years of *Analog Dialogue*. Included are articles of lasting interest on practice, techniques, ideas and applications, as well as articles that introduced landmark products. [ISBN-0-9-916550-10-9F]



*Digital Signal Processing.* A 24-page guide to Analog Devices' products and capabilities in Digital Signal Processing. [G1633A-50-9/94]

*ESD Prevention Manual*—Protecting ICs from electrostatic discharges. Thirty pages of information that will assist the reader in implementing an appropriate and effective program to assure protection against electrostatic discharge (ESD) failures. [E825A-5-11/86]

*General-Purpose Converters: Reference Designs, Evaluation Boards:* A 10-page description of evaluation hardware and software, including a new evaluation system for high- and medium-speed general-purpose A/D converters, employing an Eval-Control Board in conjunction with daughter cards which implement the test circuits. [G2114-25-2/96]

*High-Speed Signal Processing.* A 16-page brochure illustrating how Analog Devices' broad high-speed product offering addresses the requirements of various real-world applications by showing complete "signal chain" solutions. [G2091-50-12/95]

*Instrumentation Amplifier Application Guide*, by Charles Kitchen and Lew Counts. Its 44 pages include basic instrumentation-amplifier ("in-amp") theory, design considerations, applications, specifications, and products—plus a brief bibliography and two indexes (by topic and by device model number). [G1573A-20-9/92]

*Integrated Solutions for Motor Control Applications.* A 12-page brochure that includes many levels of integration from discrete ICs to advanced single-chip DSP motor controllers.

*Key Products Overview—Standard Linear Products.* A 102-page brochure. [G1999-20-4/95]

*Low-Power Analog-to-Digital Converters.* An 8-page reference guide to power-saving ADCs. [Low-Power-A-to-D]

*New Audio Signal Processing Integrated Circuits—1995–1996.* A 12-page brochure featuring "design-in" audio products: including op amps, DSP, codecs, special functions and converters. [G1838A-15-9/95]

*New High-Performance Amplifiers*, including high-speed, precision, low-noise, instrumentation, single-supply, low-power. A 12-page brochure. [G1717A-30-8/93]

*Personal Sound Architecture.* An 8-page brochure describing a programmable architecture for integrating sound into personal computers using software-based technologies and IC chipsets (including Analog Devices' DSPs, codecs, and other peripherals) for sound cards. [G1797-15-5/93]

*Power Supplies*—Linear Supplies • DC-DC Converters. 12-page Short Form Catalog listing AC/DC Power Supplies, Modular DC/DC Converters, Power-Supply Test Procedures, Transients, Thermal Derating, Mechanical Outlines of Packages and Sockets. [G709B-10/85]

*RMS-to-DC Conversion Application Guide 2nd Edition* by C. Kitchen and L. Counts (1986—61 pages). RMS-DC Conversion: Theory, Basic Design Considerations; RMS Application Circuits; Testing Critical Parameters; Input Buffer Amplifier Requirements; Programs for Computing Errors, Ripple and Settling Time. [G803A-30-5/86]

*A Selection Guide for Serial DACs.* Eight pages of Serial 8-/16-bit DACs for supplies from +3 to  $\pm 15$  V. [G1982-15-12/94]

*Single Supply Amplifier Guide.* A card summarizing single-supply amplifiers available from ADI in Fall '95. [G1887-20-3/94]

*Signal Chain Guide, Volume 1, 1996.* A 56-page brochure providing a means for selecting all of the appropriate Analog Devices Standard Linear Products from the Signal Chain System perspective. [G1989B-20-2/96]

*Signal Processing for Industrial Applications:* I/O components for process control and industrial automation, including sensors, amplifiers, A/D and V/F converters, intelligent signal conditioners, D/A converters, motion control. A 16-page brochure. [G2120-20-3/96]

*Solutions for GSM/DCS-1800/DCS-1900.* A 12-page brochure on chips and chipsets for wireless. Includes a glossary of wireless "buzzwords," such as TCH-HS. [G2043-15-7/95]

*Surface Mount IC.* \*\* A 28-page guide to ICs in SO and PLCC packages. Products include op amps, rms-to-dc converters, DACs, ADCs, VFCs, sample-holds and CMOS switches. [G1056-25-3/87]

## DIGITAL SIGNAL PROCESSING USER'S MANUALS

Available at no charge for single copies; write on letterhead.

*ADSP-2100 FAMILY USER'S MANUAL, 3rd Edition, 1995.* A comprehensive reference for Analog Devices' ADSP-2100 Family, an architectural and code-compatible set of 16-bit fixed-point DSP microprocessors that offer varying levels of feature integration. Topics covered in this manual include: Base architecture—computation units, program sequencer, data-address generators; Integrated on-chip peripherals—serial ports, timer, host interface port, A/D and D/A converters, DMA ports; System hardware and memory interfacing; Programmer's model and instruction-set reference; System design and programming examples. [82-000780-03]

\*\*This publication is available in North America only.



**ADSP-21020 USER'S MANUAL.** [Floating-Point Processor] Introduction; Computational Units; Program Sequencing; Data Addressing; Timer; Memory Interface; Instruction Summary; Assembly Programmer's Tutorial; Hardware System Configuration; Appendices; Index. Contains 394 pages. [E1798B-2-1/95]

**ADSP-2106x SHARC® USER'S MANUAL, Second Edition,** (1997). A comprehensive reference for Analog Devices' ADSP-2106x SHARC—Super Harvard Architecture Computer—a high performance 32-bit floating-point digital signal processor. The topics covered in this manual include: Core Processor-Computation Units, Program Sequencer, Instruction Cache, Data Address Generators; Dual-Ported SRAM; External Host Port; I/O Processor-DMA Controller, Serial Ports, Link Ports; System Hardware and Memory Interfacing; Instruction Set Reference; Systems Design and Programming Examples. [E2003A-16-5/97]

## TECHNICAL REFERENCE BOOKS

Can be purchased in North America from Analog Devices, Inc., at the prices shown. \*\*\* If more than one book is ordered, deduct a discount of \$1.00 from the price of each book. Price of the entire set of 13 books is \$270.00—a bargain for your department's library. VISA and MasterCard are welcome; phone (781) 329-4700 or fax (781) 461-3700. Or send your check for the indicated amount to Analog Devices, Inc., P.O. Box 9106, Norwood, MA 02062-9106.

**ADSP-21000 FAMILY APPLICATIONS**, Vol. I, published by the Applications Staff of Analog Devices, DSP Division (358 pages), 1994. A companion to the ADSP-21000 family of floating-point processors. Introduction; Trigonometric, mathematical and transcendental functions; Matrix functions; FIR and IIR filters; Multirate filters; Adaptive filters; Fourier transforms; Graphics; Image processing; JTAB down-loader; Index. Includes 33 figures, 14 tables and 61 program listings. [ISBN-0-916550-14-1] \$22.00

**AMPLIFIER APPLICATIONS GUIDE**, by the Applications Engineering Staff of Analog Devices and edited by Walt Kester, published by Analog Devices (1992). Contains 648 pages of timely and practical information on amplifiers—including operational, audio, instrumentation, video, and log amps. Topics include: Introduction; Precision transducer interfaces; High impedance, low current; Single-supply, low-power; Audio; Filtering, Driving ADCs; Video and other high-speed applications; Nonlinear circuit applications; Unusual applications; Subtleities; Hardware techniques; Simulation; and a complete Index. [G1646A-10-8/92] \$20.00

**ANALOG-DIGITAL CONVERSION HANDBOOK: Third Edition**, by the Engineering Staff of Analog Devices, edited by Daniel H. Sheingold. Englewood Cliffs, NJ: Prentice Hall (1986). A comprehensive guide to A/D and D/A converters and their applications. This third edition of our classic is in hardcover and has more than 700 pages, an Index, a Bibliography, and much new material, includ-

ing: video-speed, synchro-resolver, V/F, high-resolution, and logarithmic converters, ICs for DSP, and a "Guide for the Troubled." Seven of its 22 chapters are totally new. [ISBN-0-13-032848-0] \$32.95

**DIGITAL SIGNAL PROCESSING APPLICATIONS USING THE ADSP-2100 FAMILY**, Vol. I, by the Applications Staff of Analog Devices, DSP Division; edited by Amy Mar (628 pages). Englewood Cliffs, NJ: Prentice Hall (1992). Bridge the gap between DSP algorithms and their real-world implementation on state-of-the-art signal processors. Each chapter tackles a specific application topic, briefly describing the algorithm and discussing its implementation on the ADSP-2100 family of DSP chips. Comprehensive source-code listings are complete with comments and accompanied by explanatory text. Programs are listed on a pair of supplementary diskettes—furnished with the book. Application areas include fixed- and floating-point arithmetic, function approximation, digital filters, one- and two-dimensional FFTs, image processing, graphics, LP speech coding, PCM, ADPCM, high-speed modem algorithms, DTMF coding, sonar beam-forming. Additional topics include memory interface, multiprocessing, and host interface. The book can serve as a companion to *Digital Signal Processing in VLSI*. **Now in paperback**; its price includes a diskette. [ISBN-0-13-219726-V.C.X] \$30.00

**DIGITAL SIGNAL PROCESSING APPLICATIONS USING THE ADSP-2100 FAMILY**, Vol. II, by the Applications Staff of Analog Devices, DSP Division; edited by Jere Babst, (658 pages). Englewood Cliffs, NJ: Prentice Hall (1995). This book is the second volume of Applications for the ADSP-2100 Family of Digital Signal Processors, and it is intended to complement, rather than replace, the information contained in Volume I. Each chapter embraces a single application topic, briefly describes the algorithm, and discusses its implementation on ADSP-2100 Family Processors. This book can serve as a companion to *Digital Signal Processing in VLSI* and *Digital Signal Processing Applications Using the ADSP-2100 Family*, Vol. I, in paperback; the price includes a diskette. [ISBN-0-13-178567-2] \$30.00

**DIGITAL SIGNAL PROCESSING IN VLSI**, by Richard J. Higgins. Englewood Cliffs, NJ: Prentice Hall (1990). An introductory 614-page guide for the engineer and scientist who needs to understand and use DSP algorithms and special-purpose DSP hardware ICs—and the software tools developed to carry them out efficiently. Real-World Signal Processing; Sampled Signals and Systems; The DFT and the FFT Algorithm; Digital Filters; The Bridge to VLSI; Real DSP Hardware; Software Development for the DSP System; DSP Applications; plus Bibliography and Index. [ISBN-0-13-212887-V.C.X] \$38.00

**HIGH-SPEED DESIGN TECHNIQUES HANDBOOK** by the applications staff of Analog Devices edited by Walt Kester (466 pages) 1996. Theory and applications of high speed components including op amps, video multiplexers, voltage controlled amplifiers, log amps, mixers, RF/IF subsystems, ADCs, DACs, and DDS systems. Sampling theory, undersampling, antialiasing filtering, and dynamic ADC specifications. [G2164-10-9/96] \$30.00



*LINEAR DESIGN SEMINAR*, published by Analog Devices (1994). The basics of practical analog design with: Amplifiers, comparators, analog multipliers & mixers, rms-to-dc converters, sampled-data systems, data acquisition & conversion, voltage references, switches and muxes, sample-holds, transducer interfacing, filtering, practical hardware design techniques. In 710 pages, 8 1/2" x 11" softcover. [G1829-10-9/94] \$25.00

*MIXED-SIGNAL DESIGN SEMINAR*, published by Analog Devices (1991). Contents: Introduction to mixed-signal processing of real-world signals and signal conditioning; Linear and nonlinear analog signal processing; Fundamentals of sampled-data systems; ADCs for DSP applications; DACs for DSP applications; Sigma-delta ADCs and DACs; Digital signal-processing techniques; DSP hardware; Interfacing ADCs and DACs to digital signal processors; Mixed-signal processing applications; Mixed-signal circuit techniques; Index. In 392 pages. [G1516A-5-12/91] \$22.00

*NONLINEAR CIRCUITS HANDBOOK: Designing with Analog Function Modules and ICs*, by the Engineering Staff of Analog Devices, edited by Daniel H. Sheingold. Norwood, MA: Analog Devices, Inc. (1976). A 540-page guide to multiplying and dividing, squaring and rooting, rms-to-dc conversion, and multifunction devices. Principles, circuitry, performance, specifications, testing, and application of these devices—contains 325 illustrations. [ISBN-0-916550-01-X] \$ 5.95

*PRACTICAL ANALOG DESIGN TECHNIQUES*, published by Analog Devices, 1995. Op amps: Single Supply; High Speed. ADCs: High Resolution; High Speed. Undersampling. Multichannel. Overvoltage effects on analog ICs. Distortion measurements. Hardware design techniques. Index. Contains 428 pages. [ISBN-0-916550-16-8] \$30.00

*TRANSDUCER INTERFACING HANDBOOK: A Guide to Analog Signal Conditioning*, edited by Daniel H. Sheingold. Norwood, MA: Analog Devices, Inc. (1980). A book for the electronic engineer who must interface transducers for temperature, pressure, force, level, or flow to electronics, these 260 pages tell how transducers work—as circuit elements—and how to connect them to electronic circuits for effective processing of their signals. [ISBN-0-916550-05-2] \$14.50

*SYSTEMS APPLICATIONS GUIDE*, published by Analog Devices, 1993. Precision sensor signal conditioning and transmission; MUXing; PGAs; High-accuracy: sample-holds, references, conversion; audio; video; high-speed: signals & systems, amplification, ADC selection, interfacing, performance verification S-D; wide-dynamic range; DDS, signal computing, motor control. In 800 pages. [G1829-10-9/93] \$30.00



## North American Sales Offices and Representatives

**Alabama:** \*205-534-2414  
**Alaska:** \*425-822-1655, \*714-641-9391  
**Arizona:** \*714-641-9391, \*602-675-9252  
**Arkansas:** \*972-231-5094  
**California:** \*714-641-9391 (South),  
 \*408-559-2037 (North)  
**Colorado:** \*714-641-9391  
**Connecticut:** \*781-461-3000, 203-303-0775,  
 203-792-7106  
**Delaware:** \*215-643-7790  
**Florida:** \*407-660-8444  
**Georgia:** \*770-497-4440  
**Hawaii:** \*714-641-9391  
**Idaho:** \*714-641-9391  
**Illinois:** \*847-519-1777  
**Indiana:** \*219-489-3083, 317-243-3750  
**Iowa:** \*319-377-7497  
**Kansas:** \*314-839-1465  
**Kentucky:** \*770-497-4440, WKY 317-243-3750  
**Louisiana:** \*972-231-5094  
**Maine:** \*781-461-3000

**Maryland:** \*215-643-7790  
**Massachusetts:** \*781-461-3000  
**Michigan:** 248-615-4000, \*248-348-5795  
**Minnesota:** 612-835-9226  
**Mississippi:** \*770-497-4440  
**Missouri:** \*314-839-1465  
**Montana:** \*714-641-9391  
**Nebraska:** \*314-839-1465  
**Nevada:** \*408-559-2037, \*714-641-9391  
**New Hampshire:** \*781-461-3000  
**New Jersey:** 908-303-0775 (north),  
 \*215-643-7790 (south)  
**New Mexico:** \*714-641-9391, \*602-675-9252  
**New York:** \*781-461-3000, 716-425-9100,  
 516-224-4914  
**North Carolina:** \*919 833-6225  
**North Dakota:** 612-835-9234  
**Ohio:** 216-247-0060, 614-487-1882  
**Oklahoma:** \*972-231-5094  
**Oregon:** 425-822-1655  
**Pennsylvania:** \*215-643-7790

**Rhode Island:** \*781-461-3000  
**South Carolina:** \*770-497-4440  
**South Dakota:** 612-835-9234  
**Tennessee:** \*770-497-4440  
**Texas:** \*972-231-5094  
**Utah:** \*1-800-262-5645  
**Vermont:** \*781-461-3000  
**Virginia:** \*215-643-7790  
**Washington:** \*425-822-1655  
**West Virginia:** 412-746-5020  
**Wisconsin:** \*847-519-1777  
**Wyoming:** \*714-641-9391  
**Puerto Rico:** 787-753-9805  
**Canada:** 905-821-7800, 613-564-0014,  
 514-697-0801, 604-465-6892  
**Mexico:** \*781-461-3000

\*Analog Devices, Inc., Direct Sales Offices

## North American Distributors

**Allied Electronics** 800-433-5700  
**Bell Industries** 800-289-2355  
**Chip Supply** 407-298-7100

**Future Electronics** 800-388-8731  
**Hamilton Hallmark** 800-332-8638  
**Newark Electronics** 800-463-9275

**Pioneer** 800-657-0168  
**Semi Dice** 562-594-4631  
**Wyle** 800-414-4144



## International Direct Sales Offices

**Australia:** (59) 867755  
**Austria:** (1) 888 55 04-0  
**Brazil:** (11) 5182 2767  
**Denmark:** 42 845800  
**France:** 01 46-74-45-00  
**Germany:** 089 76 903-0, 0221/68 929-0, 0711/139 908-0

**Hong Kong:** (2) 506-9336  
**India:** (91) 11-623-0565  
**Israel:** (9) 7744461  
**Italy:** (2) 665 00 120, \*(6) 5220 0186  
**Japan:** (3) 5402-8210, (6) 372-1814  
**Korea:** (2) 554-3301

**Netherlands:** 76-5233200  
**Singapore:** 375-8200  
**Sweden:** (8) 282 740  
**Taiwan:** (02) 7195 612  
**United Kingdom:** 01932 266 000, 0118 978 8235  
 (Firefly Technology Ltd-Mil/Aero Representative)

## International Distributors

**Argentina:** Semak Sociedad Anonima (54 1) 381 2108  
**Australia:** BBS Electronics Australia, Pty. Ltd. (2) 9894 5244; Insight Electronics Pty. Ltd. (3) 9761 3455; Lockhart Pty. Ltd. (8) 9244 3211; Trio Electrix Pty. Ltd. (8) 8234 0504  
**Austria:** SEI-Elbatex (1) 86642-0, SPOERLE ELECTRONIC (1) 360 46-0  
**Baltics and Estonia:** Adimir Ltd. (2) 526402  
**Belgium:** ACAL Belgie 02-720 59 83, SPOERLE ELECTRONIC 02 725 46 60  
**Brazil:** Bridge International (11) 5589 1689, Condigy Components Electronics Ltda. (11) 716 2217, Alphatech Services E Com. Ext (55 11) 290-3444  
**Bulgaria:** K1 ELECTRONICS (92) 519 793, SEI/Elbatex (92) 962 5739  
**Croatia:** ALMA-ELECTRONIC 385/1/325509, SEI-Elbatex 386/1/159 71 98  
**Czechia:** AMTEK SPOL s.r.o. (5) 43216066, SEI-Elbatex (2) 47 63 707  
**Denmark:** Jakob Hatteland Electronic A/S 70 10 22 11  
**Finland:** Oxxo Oy 9-584 2600  
**France:** Avnet EMG (01) 49-65-25-00, CCI Electronique (01) 41-80-70-00, Dimacel Composants (01) 34-23-70-00, Sonepar Electronique (01) 69-19-89-00  
**Germany:** REIN Components GmbH 02153 733-112, SASCO SEMICONDUCTOR 089/4611-0, SEI-Jermyn 06431/508-0, Semitron 07742/8001-0, SPOERLE ELECTRONIC 06103/304-0  
**Greece:** MICRELEC (1) 5395042  
**Hong Kong:** Arrow Electronics Asia Pacific (2) 2484 2685, General Engineers Hong Kong (2) 503-2212, Texny Gloryack (HK) Ltd. (2) 2765 0188, Chinatronics Tech, Ltd. (2) 2302 0702  
**Hungary:** SEI/Elbatex (1) 269 90 93, SMD Technology KFT (1) 3707994  
**India:** Analog Sales Pvt. Ltd. (91) 11-623-0565, Capricorn Systems(s) Pte Ltd. (65) 842 0966, B.B.S. Electronics (India) Pvt., Ltd. (Bangalore) 91-80-2217912; (New Delhi) 91-11-6464642; (Mumbai) 91-22-6052606

**Ireland:** Arrow Electronics 1 4595540, Avnet Lyco 1 8901000, Abacus Polar 0505 23005  
**Italy:** Avnet EMG srl (2) 381901, Hellis S.A.S. (536) 804104, La Technika Due (11) 2425905, LASI ELETTRONICA (02) 661431, Pinnacle Special Technologies SRL (2) 56810413, Technika Due (438) 555447  
**Korea:** Analog World Co. Ltd. (2) 701 5993, Tong Baek Electronics Co. Ltd. (2) 715 6623, Lite-On Korea Ltd. (2) 650 9700  
**Malaysia:** Excelpoint Systems (PTE) Ltd. 03-2448929  
**Mexico:** Canadien (8) 365 2020  
**Netherlands:** ACAL Nederland 040-2502602, SPOERLE ELECTRONIC 040-2309999, 030-6091234  
**New Zealand:** Memec EBV (NZ) Ltd. (9) 6363 5984  
**Norway:** BIT ELEKTRONIKK 66 77 65 00  
**People's Republic of China:**

**Arrow Electronics:** Beijing (10) 62628296; Chao Yang Dist. (Beijing) (10) 64671779; Fuzhou (591) 784 8456; Hong Kong (2) 2484 2113; Shanghai (21) 62493041; Shenzhen (755) 229 7966  
**Excelpoint Systems (PTE) Ltd:** Beijing (10) 6837 3894, 6838 5621; Chengdu (28) 662 8872, 662 4475; Shanghai (21) 6482 2280, 6451 0028; Shenzhen (755) 3249 492, 3249 493  
**Shanwei Excelpoint Entp. Co:** Shanghai (21) 6482 2280  
**Poland:** P.E.P. ALFINE (61) 213 375, SEI-Elbatex (2) 6217122  
**Portugal:** SEI-SELCO (2) 973 82 03  
**Romania:** TOP 9+ (401) 210 91 24  
**Russia:** AO AUTEX (7095) 3349151, ARGUSSOFT Co. (7095) 2883602  
**Singapore:** Excelpoint Systems PTE Ltd. 741-8966  
**Slovakia:** DIALOGUE (838) 722 030, SEI-Elbatex (7) 572 4173  
**Slovenia:** ALMA-ELECTRONIC (1) 1598510, SEI-Elbatex (1) 1597198  
**South Africa:** Analog Data Products CC (11) 805-6507  
**Spain:** SEI/SELCO (91) 637 10 11

**Sweden:** IE Komponenter AB 08-634 66 00, Jakob Hatteland Electronic AB 08-445 75 00  
**Switzerland:** SASCO SEMICONDUCTOR 01 874 62 80, 021-8032550, SEI-Elbatex AG 056/437 5111, SPOERLE ELECTRONIC Distribution International GmbH 01/874 62 62, 024-470100  
**Taiwan:** Andev Technology Co., Ltd. (02) 763-0910, Chieftron Enterprise Co., Ltd. (02) 722 3570, Golden Way Electronic Corp. (02) 6981868  
**Turkey:** ELEKTRO Electronics (216) 461 07 90  
**United Kingdom:** Abacus Polar 01525 858000, Arrow-Jermyn Electronics 01234 270027, Avnet-Access 01438 788300, Kudos Thame 0118 9351010, Phoenix Electronics Ltd 01555 751566, SEI-Millennium Electronic Components 01203 694555

## EUROPE HEADQUARTERS

Am Westpark 1-3, D-81373 München, Germany;  
 Tel: 089/76 903-0; Fax: 089/76 903-157

## JAPAN HEADQUARTERS

New Pier Takeshiba, South Tower Building,  
 1-16-1 Kaigan, Minato-ku, Tokyo 105, Japan;  
 Tel: (3) 5402-8210; Fax: (3) 5402-1063

## SOUTHEAST ASIA HEADQUARTERS

2102 Nat West Tower, Times Square,  
 One Matheson Street, Causeway Bay,  
 Hong Kong; Tel: (2) 506-9336; Fax: (2) 506-4755

## WORLDWIDE HEADQUARTERS

One Technology Way, P.O. Box 9106,  
 Norwood, MA 02062-9106, U.S.A.  
 Tel: (781) 329-4700, (1-800) 262-5643 (U.S.A. only);  
 Fax: (781) 326-8703  
 World Wide Web Site: <http://www.analog.com>































# PRODUCT INDEX

Model	Page
AD2S80A	19, 138, 139
AD2S81A	138, 139
AD2S82A	19, 138, 139
AD2S83	19, 138, 139
AD2S90	19, 138, 139
AD2S99	19, 138, 139
AD2S100	138, 139
AD20msp400HF	126, 130
AD20msp410	97, 98, 99, 100, 126, 130
AD20msp415	97, 98, 99, 126, 130
AD20msp910	100, 126, 130
AD102	61
AD102J	75
AD104	61
AD104J	75
AD202	61
AD202J	75
AD202K	75
AD203	61
AD203S	75
AD204	61
AD204J	75
AD204K	75
AD208	61
AD208A	75
AD210	61
AD210J	75
AD215	61, 75
AD260	4, 17, 18, 61, 75, 132, 135
AD261	18, 61
AD261B	75, 135
AD261C	75, 135
AD280	18, 21, 35, 47, 48
AD420	18, 109, 118, 120
AD421	17, 18, 21, 109, 118, 120
AD515A	63
AD524	60
AD524A	74
AD524B	74
AD524C	74

Model	Page
AD526	13, 60
AD526A	74
AD526B	74
AD526C	74
AD534	78, 79
AD536A	78, 80
AD537	178
AD537J	104, 179
AD537K	104, 179
AD538	78, 79
AD539	78, 79
AD542	63
AD544	63
AD546	54, 63
AD547	54, 63
AD548	54, 63
AD549	54, 63
AD557	109, 118
AD558	109, 118
AD561	120
AD565A	111, 120
AD566A	111, 120
AD568	111, 120
AD569	106, 111, 113, 116
AD570	29, 39
AD571	29, 39
AD573	29, 39
AD574A	29, 39
AD580	164
AD580J	165
AD581	164, 165
AD584	164, 166
AD585	167, 168
AD586	164, 165
AD587	164, 165
AD588	164, 166
AD589	164, 165
AD590	13, 18, 21, 169, 172
AD592	13, 18, 21, 169, 172
AD594	169, 170, 173, 174

Model	Page
AD595	169, 170, 173, 174
AD596	169, 170, 173, 174
AD597	169, 170, 173, 174
AD598	138, 139, 170
AD600	62, 77
AD602	62, 77
AD603	62, 77
AD604	62, 77
AD605	62, 77
AD606	62, 76
AD607	97, 98, 100
AD608	97, 100
AD620	13, 60
AD620A	74
AD620B	74
AD621	13, 60
AD621A	74
AD621B	74
AD622	60
AD622A	74
AD623	4, 13, 60, 74
AD624	60
AD624A	74
AD624B	74
AD624C	74
AD625	13, 60
AD625C	74
AD625J/A	74
AD625K/B	74
AD626	13, 60, 74
AD627	60
AD630	78, 80
AD633	12, 20, 78, 79
AD636	78, 80
AD637	78, 80
AD639	78, 80
AD640	62, 76
AD641	62, 76
AD642	64
AD644	64



# PRODUCT INDEX

Model	Page
AD645	54
AD645A	63
AD647	54, 64
AD648	54, 64
AD650	178
AD650J	104, 179
AD650K	104, 179
AD652	178
AD652J	104, 179
AD652K	104, 179
AD654	104, 178, 179
AD660	13, 18, 107, 115
AD664	106, 108, 114, 116
AD667	107, 115
AD668	111, 120
AD669	13, 107, 115
AD670	29
AD673	29, 39
AD674B	29, 39
AD676	30, 36, 40, 49
AD677	30, 36, 40, 49
AD677A	30
AD678	30, 40
AD679	30, 40
AD680	13, 164
AD680J	165
AD684	167, 168
AD688	164, 165
AD693	170, 174
AD694	170
AD694J/A	174
AD698	138, 139, 170
AD704	55, 59, 64, 66
AD705	55, 59, 63, 65
AD706	55, 59, 64, 65
AD707	55, 65
AD708	55, 65
AD711	54, 63, 82, 87
AD712	54, 64, 82, 87
AD713	54, 64, 82, 87

Model	Page
AD722	180, 181
AD724	180, 181
AD725	180, 181
AD734	78, 79
AD736	78, 80
AD737	78, 80
AD743	54, 63, 65, 82
AD744	54, 63, 82, 87
AD745	54, 63, 65, 82
AD746	54, 64, 82
AD760	13, 107, 115
AD766	107, 115
AD767	107, 115
AD768	120
AD769	111
AD774B	29, 39
AD775	34, 44
AD779	30, 40
AD780	13, 164, 165
AD781	167, 168
AD783	167, 168
AD790	102, 103
AD795	54, 63
AD797	55, 65, 82, 87
AD800	136
AD800-45	137
AD800-52	137
AD802	136
AD802-155	137
AD803	137
AD805	137
AD807	136, 137
AD808	136, 137, 204
AD809	136, 137
AD810	57, 68
AD811	57, 68, 70, 82
AD812	57, 69
AD813	57, 69
AD815	57, 69, 70
AD816	5, 57, 70

Model	Page
AD817	56, 68
AD818	56, 68
AD820	13, 54, 58, 59, 63, 71, 82
AD822	13, 54, 58, 59, 64, 71, 82
AD823	54, 56, 58, 64, 71, 82
AD824	13, 54, 58, 59, 64, 72, 82
AD825	54, 56, 63, 68, 193
AD826	56, 69
AD827	56, 69
AD828	56, 69
AD829	56, 68, 82
AD830	56, 68
AD831	97, 100
AD834	12, 78, 79
AD835	12, 78, 79
AD840	68
AD841	68
AD842	68, 70
AD843	56, 68, 82
AD844	57, 68
AD845	56, 68
AD846	68
AD847	56, 57, 68
AD871	33, 43
AD872A	33, 43
AD876	34, 44
AD876-8	34, 44
AD974	31, 32, 36, 42, 50, 190
AD976	13, 31, 42
AD976A	31
AD977	13, 32, 42
AD977A	32
AD1315	94, 95
AD1317	94, 95
AD1324	94, 95
AD1382	36, 40, 49
AD1385	30, 36, 40, 49
AD1403	164, 165
AD1403A	164, 165
AD1580	164, 165

**Boldface type** = Selection Guide page.



# PRODUCT INDEX

Model	Page
AD1581	164, 165
AD1582	164, 165
AD1583	164, 165
AD1584	164, 165
AD1585	164, 165
AD1671	43
AD1672	33, 43
AD1674A	30, 40
AD1815	85
AD1816A	85, 92, 191
AD1817A	85, 92
AD1818	85, 92
AD1819	35, 46, 85, 92, 191
AD1819A	15
AD1821	15, 85, 92, 93, 98, 101
AD1821EZ-KIT	126
AD1843	101
AD1845	85, 93
AD1847	85, 92
AD1849	85, 92
AD1851	84, 89, 107
AD1851J	89
AD1855	84, 89
AD1857	84, 89
AD1858	84, 89
AD1859	84, 89
AD1861	84, 89, 107
AD1861J	89
AD1862	84, 89
AD1862J	89
AD1864	84, 89
AD1864J	89
AD1864K	89
AD1865	84, 89
AD1865J	89
AD1865K	89
AD1866	84
AD1866J	89
AD1868N	89
AD1868N-J	89

Model	Page
AD1877	85, 91
AD1878	85, 91
AD1879	85, 91
AD1890	84, 91
AD1891	84, 91
AD1892	84, 91
AD1893	84, 91
AD5300	109, 118, 199
AD5310	109, 118, 199
AD5320	109, 118, 199
AD6190	97, 100
AD6201	98
AD6400	100
AD6402	97, 100
AD6432	100
AD6435	5, 98, 205
AD6436	5, 98, 205
AD6437	5, 98, 205
AD6458	97
AD6459	97, 100
AD6600	98, 100
AD6620	6, 7, 10, 98, 100
AD6622	8
AD6640	7, 9, 22, 34, 44, 98, 100
AD6670	9
AD6816	136, 137
AD7002	97, 99
AD7008	97
AD7008-20	99
AD7008-50	99
AD7010	97, 99
AD7011	97, 98, 99
AD7013	97, 98, 99
AD7015	97, 99
AD7111	84
AD7111A	84, 90
AD7111B	90
AD7111C	90
AD7111K	90
AD7111L	90

Model	Page
AD7112	84
AD7112B	90
AD7112C	90
AD7118	84
AD7185	16
AD7224	108, 109, 116, 118
AD7225	108, 110, 116, 119
AD7226	108, 110, 116, 119
AD7228	108
AD7228A	110, 117, 119
AD7233	107, 115
AD7237A	107, 109, 115, 118
AD7242	107, 115
AD7243	107, 109, 115, 118
AD7244	107, 115
AD7245A	107, 115
AD7247A	107, 109, 115, 118
AD7248A	107, 109, 115
AD7249	107, 115, 118
AD7302	109, 118
AD7303	109, 118
AD7304	110, 119
AD7305	110, 119
AD7306	132, 135
AD7339	38, 52
AD7376	108, 112, 121
AD7390	109, 118
AD7391	109, 118
AD7392	109, 118
AD7393	109, 118
AD7394	109, 118
AD7395	109, 118
AD7396	109, 118
AD7397	109, 118
AD7416	169, 172, 216
AD7417	32, 36, 41, 50, 190
AD7418	32, 41, 190
AD7505	17
AD7506	17
AD7510DI	176



# PRODUCT INDEX

Model	Page	Model	Page	Model	Page
AD7511DI	176	AD7716	13, 35, 47	AD7829	33, 36, 41, 43, 50
AD7512DI	176	AD7720	35, 46, 188	AD7834	108, 116
AD7524	106, 113	AD7721	13, 29, 31, 32, 35, 41, 42, 46	AD7835	108, 116
AD7528	106, 113	AD7722	29, 31, 32, 35, 42, 46, 49	AD7836	106, 108, 116
AD7533	106, 113	AD7723	29, 31, 32, 33, 35, 42, 43, 46	AD7837	106, 108, 113, 116
AD7534	106, 113	AD7729	29, 35, 38, 46, 52	AD7838	108, 117, 198
AD7535	106, 113	AD7730	17, 18, 20, 35, 47, 48	AD7839	108, 117, 198
AD7536	113	AD7730A	48	AD7840	107, 115
AD7537	106, 113	AD7730L	20, 35, 47	AD7841	108, 117
AD7538	106, 113	AD7731	17, 18, 35, 47, 48	AD7845	106, 108, 113, 116
AD7541	104, 179	AD7741	178	AD7846	106, 108, 113, 116
AD7542	104, 179	AD7742	178	AD7847	106, 108, 113, 116
AD7547	106, 113	AD7750	157, 163, 215	AD7849	13, 18, 106
AD7548	106, 113	AD7751	157, 163, 215	AD7849A	108, 113, 116
AD7549	106, 113	AD7752	157, 163, 215	AD7849B	108, 113, 116
AD7564	13, 106, 114	AD7769	38, 52	AD785x	18
AD7568	106, 114	AD7774	49, 52	AD7851	32, 36, 42
AD7569	38, 52	AD7776	31, 41	AD7853	13, 32, 36, 41, 49
AD7572A	29, 39	AD7777	31, 36, 37, 49	AD7853L	32, 36, 41, 49
AD7575	31	AD7778	31, 36, 37, 49	AD7854	13, 31, 36, 41, 49
AD7578	29	AD7801	109, 118	AD7854L	31, 36, 41, 49
AD7579	31	AD7804	110, 119	AD7856	4, 32, 36, 42, 49, 50
AD7580	31, 36, 39	AD7805	110, 119	AD7858	4, 13, 32, 36, 41, 49, 50
AD7581	29, 39	AD7808	110, 119	AD7858L	32, 36, 41, 49, 50
AD7582	29	AD7809	110, 119	AD7859	13, 31, 36, 41, 49, 50
AD7628	106	AD7810	32, 41	AD7859L	31, 36, 41, 49, 50
AD7669	38, 52	AD7811	32, 36, 41, 50	AD7861	31, 37, 41, 49
AD7672A	29, 39	AD7812	32, 36, 41, 50	AD7862	31, 37, 42, 50, 51, 138
AD7701	35, 47, 48	AD7813	31, 41	AD7863	31, 37, 42, 50, 51, 138
AD7703	35, 47, 48	AD7816	169, 172	AD7864	31, 37, 42, 50, 138
AD7705	21, 35, 47, 48, 189	AD7817	36, 41, 50	AD7868	30, 38, 52
AD7706	21, 35, 47, 48, 189	AD7818	41	AD7869	30, 52
AD771x	18	AD7819	31, 41	AD7870	30, 40
AD7710	17, 20, 35, 47, 48	AD7821	31, 33, 39, 43	AD7870A	30, 40
AD7711	17, 35, 47, 48	AD7822	31, 33, 41, 43	AD7871	30, 40
AD7711A	35, 47, 48	AD7823	32, 41	AD7872	30, 40
AD7712	17, 35, 47, 48	AD7824	31, 36, 50	AD7874	13, 37, 40, 50, 138
AD7713	17, 35, 47, 48	AD7825	33, 36, 41, 43, 50	AD7875	30, 40
AD7714	13, 17, 20, 21, 35, 47, 48	AD7827	33, 43, 185	AD7876	30, 40
AD7715	13, 20, 21, 35, 47, 48	AD7828	31, 36, 50	AD7878	30, 40

Boldface type = Selection Guide page.



# PRODUCT INDEX

Model	Page
AD7880	31, 42
AD7882	13
AD7883	31, 41
AD7884	30, 40
AD7885	30, 40
AD7886	40
AD7887	32, 41
AD7888	32, 36, 41, 50, 190
AD7889	32, 42, 184
AD789x	18
AD7890	4, 32, 36, 42, 50
AD7891	4, 31, 32, 36, 42, 50
AD7892	31, 32, 42
AD7893	13, 32, 42
AD7894	32, 42, 184
AD7895	32, 42
AD7896	13, 32, 41
AD7943	106, 111, 113, 120
AD7945	106, 111, 113, 120
AD7948	106, 111, 113, 120
AD8001	12, 57, 68
AD8002	57, 69
AD8004	57, 70
AD8005	12, 22, 57, 68
AD8009	12, 22, 57, 68
AD8010	56, 68, 70, 194
AD8011	57, 68
AD8012	57, 69, 194
AD8013	57, 69
AD8015	57, 69
AD8023	69
AD8031	56, 58, 68, 70
AD8032	56, 58, 69, 71
AD8036	22, 56, 69
AD8037	22, 56, 69
AD8041	56, 58, 68, 71
AD8042	5, 56, 58, 69, 71
AD8044	56, 58, 70, 72
AD8047	56, 68
AD8048	56, 68

Model	Page
AD8051	56, 58, 68, 71
AD8052	56, 58, 69, 71
AD8055	56, 68
AD8056	56, 69
AD8072	57, 69
AD8073	57, 69
AD8079	69
AD8079A	56
AD8079B	56
AD8108	142, 176, 220
AD8109	142, 176, 220
AD8110	142, 176, 220
AD8111	142, 176, 220
AD8116	142, 176
AD8170	140, 142
AD8174	140, 142
AD8180	140, 142
AD8182	140, 142
AD8184	140, 142
AD830x	18
AD8300	109, 118
AD8303	109, 119
AD8307	62, 76
AD8320	62, 77
AD8400	112, 118, 121
AD8401	31, 36, 50, 52
AD8402	112, 118, 121
AD8403	112, 119, 121
AD8509	62, 76, 195
AD8511	62, 76, 195
AD8519	56, 68, 193
AD8522	13, 109, 119
AD8531	11, 54, 58, 59, 63, 70, 87
AD8532	54, 58, 59, 64, 71, 87
AD8534	54, 58, 59, 64, 72, 87
AD8541	54, 58, 59, 63, 70
AD8542	54, 58, 59, 64, 71
AD8544	54, 58, 59, 64, 72
AD8551	54, 55, 58, 59, 63, 65, 70, 192
AD8552	54, 55, 58, 59, 64, 65, 71, 192

Model	Page
AD8554	54, 55, 58, 59, 64, 66, 72, 192
AD8561	102, 103
AD8564	102, 103
AD8582	13, 109, 119
AD8598	102
AD8600	106, 108, 110, 114, 117, 119
AD8801	110, 119
AD8802	110, 119
AD8803	110, 119
AD8804	110, 119
AD8840	106
AD8842	114, 117
AD9002	45
AD9002A	34
AD9012	34, 45
AD9020	34, 45
AD9034	45
AD9040A	34, 45
AD9042	34, 44
AD9048	34, 45
AD9049	34, 44
AD9050	34, 44
AD9050-60	44
AD9051	34, 44
AD9054	34
AD9054-135	44
AD9054-200	44
AD9057	34, 44
AD9058	34, 37, 45, 51
AD9059	34, 37, 44, 51
AD9060	34, 45
AD9066	34, 37, 44, 51
AD9070	22, 34, 44
AD9071	34, 44
AD9100	167, 168
AD9101	167, 168
AD9200	34, 44
AD9201	34, 37, 44, 51, 186
AD9220	13, 22, 23, 33, 43
AD9221	33, 43



# PRODUCT INDEX

Model	Page
AD9223	33, 43
AD9224	22, 34, 44, 187
AD9225	22, 34, 44, 187
AD9240	33, 43
AD9241	33, 43
AD9243	33, 43
AD9260	33, 35, 43, 46
AD9280	34, 44
AD9281	34, 37, 44, 51, 186
AD9300	140, 142
AD9500	94, 96
AD9501	94, 96
AD9560	96
AD9560A	94
AD9561	94, 96
AD9617	57, 68
AD9618	57, 68
AD9630	56, 69
AD9631	8, 22, 56, 68
AD9632	8, 22, 56, 68
AD9660	94, 96
AD9661A	94, 96
AD9696	102, 103
AD9698	102, 103
AD9701	111, 120
AD9708	111, 121
AD9731	111, 120
AD9760	111, 121
AD9760-50	111
AD9761	111, 121
AD9762	111, 121
AD9764	8, 10, 111, 121
AD9768	111, 121, 200
AD9774	111, 121
AD9801	14, 38, 52
AD9802	14, 23, 38, 52
AD9805	23, 38, 52
AD9807	14, 23, 38, 52
AD9830	97, 99
AD9831	97, 99

Model	Page
AD9832	97, 99, 196
AD9850	97, 99
AD9901	97, 99
AD10242	34, 37, 45, 51
AD14060	123, 128, 202
AD14060L	123, 128, 202
AD14160	123, 128
AD14160L	123, 128, 202
AD22001	169, 171
AD22050	60, 74
AD22055	74
AD22057	60, 74
AD22100	4, 13, 18, 21, 169, 172
AD22103	4, 21, 169, 172
AD22104	169
AD22105	18, 169, 173
AD22151	169, 171
AD53040	94, 95
AD53041	94, 95
AD53042	94, 95
AD73311	35, 38, 46, 52, 85, 91
AD73322	35, 37, 38, 46, 52, 85, 92
AD75004	107, 115
AD75019	142, 176
AD96685	102, 103
AD96687	102, 103
ADDC02803SC	156, 161
ADDC02805SA	156, 161
ADDC02808PB	156, 161
ADDC02809SA	156, 161
ADDC02812DA	156, 161
ADDC02815DA	156, 161
ADDC02828SA	156, 161
ADDC27005SA	156, 161
ADDC27008PB	156, 161
ADDS-21xx-EZ-KIT	124
ADDS-21xx-EZ-LITE	129
ADDS-21xx-SW (Software)	124
ADDS-21xx-SW-PC	129
ADDS-21xx-SW-SUN	129

Model	Page
ADDS-21xx-WKSHP	124, 129
ADDS-2101-EZ-ICE	124, 129
ADDS-2101-EZ-KIT	124, 129
ADDS-2101-EZ-LAB	124, 129
ADDS-2111-EZ-ICE	124, 129
ADDS-2111-EZ-KIT	124, 129
ADDS-2111-EZ-LAB	124, 129
ADDS-2171-EZ-ICE	124, 129
ADDS-2171-EZ-LAB	124, 129
ADDS-2181-EZ-ICE	129
ADDS-210xx-SW (Software)	124
ADDS-210xx-SW-PC	129
ADDS-210xx-SW-SUN	129
ADDS-210xx-WKSHP	124, 129
ADDS-21020-EZ-ICE	124, 129
ADDS-21020-EZ-KIT-PL	124, 129
ADDS-21020-EZ-LAB	124, 129
ADDS-2106x-EZ-ICE	124, 129
ADDS-2106x-EZ-KIT	124, 129
ADDS-2106x-EZ-LAB	124, 129
ADEL2020	57, 68
ADG201A	176, 177
ADG201HS	176, 177
ADG202A	176, 177
ADG211A	176, 177
ADG212A	176, 177
ADG221	176, 177
ADG222	176, 177
ADG312	176
ADG313	176
ADG333A	176, 177
ADG406	140, 141
ADG407	140, 141
ADG408	13, 140, 141
ADG409	140, 141
ADG411	176, 177
ADG412	176, 177
ADG413	176, 177
ADG417	176, 177
ADG419	176, 177

Boldface type = Selection Guide page.



# PRODUCT INDEX

<b>Model</b>	<b>Page</b>
ADG426	140, 141
ADG428	140, 141
ADG429	140, 141
ADG431	176, 177
ADG432	176, 177
ADG433	176, 177
ADG436	176, 177
ADG438F	13, 140, 141
ADG439F	13, 140, 141
ADG441	176, 177
ADG442	176, 177
ADG444	176, 177
ADG451	176, 177, 218
ADG452	176, 177, 218
ADG453	176, 177, 218
ADG465	140, 142
ADG466	140, 142
ADG467	4, 140, 142
ADG506A	259
ADG507A	13, 259
ADG508A	140, 141
ADG508F	13, 140, 141
ADG509A	13, 140, 141
ADG509F	13, 140, 141
ADG511	176, 177
ADG512	176, 177
ADG513	176, 177
ADG527A	140
ADG528A	140
ADG528F	13, 140, 141
ADG529A	259
ADG608	140, 148
ADG609	140, 148
ADG701	218
ADG702	218
ADG719	219
ADG774	140, 142, 219
ADμC81x	18
ADμC812	21, 125, 130
ADM2xx	12, 18

<b>Model</b>	<b>Page</b>
ADM2xxE	14
ADM20x	4
ADM202	132, 134
ADM202E	131, 133
ADM203	132, 134
ADM206	132, 134
ADM207	132, 134
ADM207E	131, 133
ADM208	132, 134
ADM208E	131, 133
ADM209	132, 134
ADM211	132, 134
ADM211E	131, 133
ADM213	132, 134
ADM213E	131, 133
ADM222	132, 134
ADM223	132, 134
ADM23xE	4
ADM230L	132, 134
ADM231L	132, 134
ADM232A	132, 134
ADM232E	17
ADM232L	132, 134
ADM233L	132, 134
ADM234L	132, 134
ADM236L	132, 134
ADM237L	132, 134
ADM238L	132, 134
ADM239L	132, 134
ADM241L	132, 134
ADM242	132, 134
ADM4xxE	14
ADM48x	4
ADM483E	13, 17, 131, 133
ADM485	13, 18, 132, 135
ADM488	132, 135
ADM489	132, 135
ADM560	18, 132, 135
ADM561	18, 132, 135
ADM660	155, 159

<b>Model</b>	<b>Page</b>
ADM660A	17
ADM663	4, 158
ADM663A	153, 158
ADM666	158
ADM666A	153, 158
ADM690	143, 145, 148
ADM690A	143, 145, 148
ADM691	143, 145, 148
ADM691A	143, 145, 148
ADM692	143, 145, 148
ADM692A	143, 145, 148
ADM693	143, 145, 148
ADM693A	143, 145, 148
ADM694	143, 145, 148
ADM695	143, 145, 148
ADM696	143, 145, 148
ADM697	144, 146, 150
ADM698	144, 146, 150
ADM699	144, 146, 150
ADM705	144, 146, 149
ADM706	144, 146, 149
ADM706P/R/S/T	144, 149
ADM707	144, 146, 149
ADM708	144, 146, 149
ADM708R/S/T	144, 149
ADM709	146
ADM709L/M/R/S/T	144, 150
ADM800L	143, 145, 148
ADM800M	143, 145, 148
ADM802L	143, 145, 148
ADM802M	143, 145, 148
ADM805L	143, 145, 148
ADM805M	143, 145, 148
ADM809	146
ADM809J/L/M/R/S/T	144, 150
ADM810	146
ADM810L/M/R/S/T	150
ADM811	146, 209
ADM811L/M/R/S/T	144, 149
ADM812	146, 209

Boldface type = Selection Guide page.



# PRODUCT INDEX

Model	Page	Model	Page	Model	Page
ADM812L/M/R/S/T	144, 149	ADMCUxx	18	ADR293	164, 165
ADM1181A	131, 133	ADMK100	259	ADSC-SKD1	259
ADM1232	144, 146, 149	ADM0D79	35, 46	ADSP-21mod870	85, 93, 98, 101, 123, 128
ADM1232LP	146	ADP667	153, 158	ADSP-21msp58	85, 93, 98, 101, 123, 128
ADM1345	132, 135, 203	ADP1073	154, 160	ADSP-21msp59	85, 93, 98, 101, 123, 128
ADM1385	131, 133, 203	ADP1108	154, 160	ADSP-21xx	4, 20
ADM1485	13, 18, 132, 135	ADP1109	17, 154, 160	ADSP-2101	13, 122, 127
ADM3xxx	12	ADP1109A	154, 160, 212	ADSP-2103	122, 127
ADM3202	131, 133, 203	ADP1110	154, 160	ADSP-2104	122, 127
ADM3222	131, 133, 203	ADP1111	154, 160	ADSP-2105	13, 122, 127
ADM3491	133, 203	ADP1147	5, 17, 154, 160	ADSP-2109	122, 127
ADM5104	136, 137	ADP1148	5, 17, 154, 160	ADSP-2111	122, 127
ADM5170	132, 135	ADP1173	154, 160	ADSP-2115	13, 122, 127
ADM5180	132, 135	ADP3xxx	18	ADSP-2161	122, 127
ADM6315	149	ADP3000	154, 160	ADSP-2162	122, 127
ADM830x	18	ADP3152	154, 160, 213	ADSP-2163	122, 127
ADM86xx	14	ADP33xx	15	ADSP-2164	122, 127
ADM8660	155, 159	ADP3300	153, 158	ADSP-2165	122, 127
ADM8690	143, 145, 148	ADP3301	153, 158	ADSP-2166	122, 127
ADM8691	143, 145, 148	ADP3302	153, 158	ADSP-2171	13, 122, 127
ADM8692	143, 145, 148	ADP3303	14, 153, 158	ADSP-2173	122, 127
ADM8693	143, 145, 148	ADP3306	153, 158, 210	ADSP-218x	6, 7, 9, 15, 22
ADM8694	143, 145, 148	ADP3307	153, 158, 211	ADSP-2181	13, 124, 127
ADM8695	143, 145, 148	ADP3308	153, 158, 210	ADSP-2183	5, 122, 127
ADM8696	143, 145, 148	ADP3309	153, 158, 211	ADSP-2185	122, 127
ADM8697	146, 150	ADP3310	153, 158	ADSP-2185L	5, 122, 127, 201
ADM8698	150	ADP3367	14, 153, 158	ADSP-2186	122, 127
ADM8699	150	ADP3603	155, 159	ADSP-2186L	5, 122, 127, 201
ADM9240	147, 151, 208	ADP3604	155, 159	ADSP-2187L	122, 127
ADM9261	147, 151, 207	ADP3605	155	ADSP-21020	123, 128
ADM9264	147, 151, 207	ADP3800	157, 163, 214	ADSP-21060	13, 123, 128
ADM9268	147, 151, 208	ADP3801	157, 163, 214	ADSP-21061	20, 123, 128
ADM9680	146	ADP3802	157, 163, 214	ADSP-21061L	123, 128
ADM9690	144, 149, 209	ADP3810	157, 163	ADSP-21062	13, 123, 126, 128
ADM14185E	131, 133	ADP3811	157, 163	ADSP-21062L	123, 128
ADM14196E	131, 133	ADR70	13	ADSST-DAM1000	126, 130
ADMC200	31, 37, 49, 138, 139	ADR29x	13	ADSST-EM1000	126, 130
ADMC201	31, 37, 49, 138, 139	ADR290	164, 165	ADSST-EM3000	126, 130
ADMC300	19, 138, 139, 206	ADR291	164, 165	ADSST-G.723.1	126, 130
ADMC330	19, 138, 139, 206	ADR292	164, 165	ADSST-G.728	126, 130

**Boldface type** = Selection Guide page.



# PRODUCT INDEX

Model	Page
ADSST-G.729	126, 130
ADSST-MOD2000	126, 130
ADSST-MOD2010	126, 130
ADSST-MPEG1000	126, 130
ADSST-MPEG2000	126, 130
ADSST-NAV2000	98, 126, 130
ADSST-NAV2100	98, 126, 130
ADSST-VC2000	126, 130
ADSST-VC3000	126, 130
ADT05	169, 173, 217
ADT10	169, 173
ADT14	169, 173
ADT18	169, 172
ADT19	169, 172
ADT45	4, 169, 172, 216
ADT50	4, 169, 172, 216
ADT70	170
ADT70F	174
ADT70G	174
ADV101	180, 182
ADV453	182
ADV458	182
ADV471	182
ADV473	180, 182
ADV476	182
ADV478	180, 182
ADV601	16, 23, 180, 182
ADV601LC	16, 23, 180, 182, 222
ADV7120	180, 182
ADV7121	22
ADV7122	22, 180, 182
ADV7123	182
ADV7127	22, 111, 120, 180, 182
ADV7128	111, 120, 182
ADV7129	180, 182
ADV7150	22, 180, 182
ADV7151	22, 180, 182
ADV7152	22, 180, 182
ADV7160	180, 182
ADV7162	180, 182

Model	Page
ADV7173	180
ADV7174	181
ADV7175	180, 181
ADV7175A	16, 23, 180, 181, 221
ADV7176	181
ADV7176A	16, 23, 221
ADV7177	180, 181
ADV7178	180, 181
ADVFC32	104, 178, 179
ADXL05	13, 169, 171
ADXL05EM1	171
ADXL05EM3	171
ADXL50	13, 169, 171
ADXL50EM1	171
ADXL150	171
ADXL150EM1	171
ADXL150EM3	171
ADXL181	13, 169
ADXL250	169, 171
AMP01	60, 74
AMP02	60, 74
AMP03	259
AMP04	4, 60, 74
AMP05	259
BUF04	22, 56, 69, 82, 87, 259
CMP01	259
CMP02	259
CMP04	102, 103
CMP05	259
CMP08	259
CMP401	102, 103
CMP402	102, 103
CMP404	259
DAC08	111, 120
DAC10	259
DAC16	111, 120
DAC86	259
DAC88	259
DAC89	259
DAC100	259

Model	Page
DAC210	259
DAC312	111, 120
DAC888	259
DAC1136	259
DAC1138	259
DAC1408A	259
DAC8012	106
DAC8043	13, 106, 113
DAC8043A	106
DAC8143	106, 113
DAC8221	106, 113
DAC8222	106, 113
DAC8228	109
DAC8229	108, 116
DAC8248	106, 113
DAC8408	106, 114
DAC8412	108, 110, 116
DAC8413	108, 110, 116
DAC8420	108, 110, 116, 119
DAC8426	107, 115
DAC8512	109, 118
DAC8562	109, 118
DAC8800	12, 108, 117
DAC8840	12, 108, 114, 117
DAC8841	110, 119
DAC8842	12, 106, 108
HDS1240E	259
HOS050	259
HOS050A	259
HOS050C	259
HOS060	259
HTC0300A	259
HTS0010	259
HTS0025	259
IS-54	100
IS-136	100
ISO/IEC13818-3	126
MAT01	55, 67
MAT02	55, 67
MAT03	55, 67

Boldface type = Selection Guide page.



# PRODUCT INDEX

Model	Page	Model	Page	Model	Page
MAT04	55, 67	OP176	55, 65, 82, 87	OP462	56, 58, 70, 72
MLT04	12, 78, 79	OP177	55, 65	OP467	56, 70
MPEG-I	126	OP181	58, 59, 71, 73	OP470	55, 66
MUX08	259	OP183	58, 71	OP471	55, 66
MUX16	259	OP184	13, 55, 58, 65, 70, 82	OP481	58, 59, 72, 73
MUX24	259	OP186	58, 59, 71, 73, 192	OP482	54, 59, 64
MUX28	259	OP191	58, 59, 70	OP484	13, 55, 58, 66, 72, 82
OP01	259	OP193	13, 58, 59, 65, 71, 73	OP490	58, 59, 73
OP02	259	OP196	58, 59, 70, 73	OP491	58, 59, 72
OP04	259	OP200	55, 65	OP492	58, 72
OP05	259	OP207	259	OP493	13, 58, 59, 66, 72, 73
OP06	259	OP213	55, 58, 65, 72, 82	OP495	58, 66, 72, 73
OP07	55, 65	OP215	259	OP496	13, 58, 59, 72, 73
OP09	259	OP220	73	OP497	55, 59, 64, 66
OP10	259	OP227	65	OSC1758	259
OP11	259	OP249	54, 64, 82	PKD01	259
OP12	259	OP250	54, 58, 59, 64, 71, 87	PM111	259
OP14	259	OP260	259	PM139	259
OP15	259	OP262	56, 58, 69, 71	PM139A	259
OP16	259	OP270	55, 65	PM155	259
OP17	259	OP271	55, 65	PM156	259
OP20	259	OP275	55, 65, 82, 87	PM157	259
OP21	259	OP279	55, 58, 71, 82, 87	PM1012	259
OP22	259	OP281	58, 59, 71, 73	PM7226	110, 116
OP27	55, 65, 82	OP282	54, 59, 64	PM7226A	108
OP32	259	OP283	58, 72	PM7524	259
OP37	55, 65	OP284	55, 58, 65, 71, 82	PM7528	259
OP41	259	OP285	55, 65, 82, 87	PM7533	259
OP42	54, 63, 82	OP290	58, 59, 73	PM7541A	259
OP43	259	OP291	58, 59, 71	PM7543	259
OP44	259	OP292	58, 72	PM7545	259
OP50	259	OP293	13, 58, 59, 65, 72, 73	PM7548	259
OP64	259	OP295	13, 58, 65, 71, 73	PM7628	106, 113
OP77	55, 65	OP296	13, 58, 59, 71, 73	RDC1742	259
OP80	259	OP297	55, 59, 64, 65	REF01	164, 165
OP90	58, 59, 73	OP400	55, 66	REF02	164, 165
OP97	55, 59, 63, 65	OP413	55, 58, 66, 72, 82	REF03	164
OP113	55, 58, 65, 71, 82	OP420	259	REF03G	165
OP160	259	OP421	259	REF05	259
OP162	56, 58, 68, 71	OP450	54, 58, 59, 64, 72, 87	REF08	259

Boldface type = Selection Guide page.



# PRODUCT INDEX

Model	Page
REF10	259
REF43	164, 165
REF19x	13
REF191	164, 166
REF192	164, 166
REF193	164, 166
REF194	164, 166
REF195	20, 164, 166
REF196	164, 166
REF198	164, 166
RPT82	259
RPT83	259
RPT86	259
RPT87	259
SDC1740	259
SDC1741	259
SDC1742	259
SMP04	167, 168
SMP05	167
SMP08	167, 168
SMP11	259
SMP12	167
SMP18	167, 168
SSM2000	11, 83, 88
SSM2005	83, 88
SSM2017	11, 15, 60, 74, 81, 86
SSM2018	259
SSM2018T	62, 83, 88
SSM2024	88
SSM2110	259
SSM2118	88

Model	Page
SSM2120	11, 83, 88
SSM2122	83, 88
SSM2125	88
SSM2125A	83
SSM2126	88
SSM2126A	83
SSM2135	15, 55, 72, 82
SSM2139	259
SSM2141	11, 60, 81, 86
SSM2142	11, 81, 86
SSM2143	11, 60, 81, 86
SSM2160	84, 90
SSM2161	11, 84, 90
SSM2163	11, 84, 90
SSM2164	62, 83, 88
SSM2165	81, 86
SSM2166	11, 81, 86
SSM2210	67
SSM2211	11, 15, 54, 70, 82, 87
SSM2220	67
SSM2275	55, 65, 71, 82, 87
SSM2300	259
SSM2402	81, 86, 176, 177
SSM2404	11, 81, 86, 176, 177
SSM2412	81, 86, 176, 177
SSM2475	55, 66, 72, 82, 87
SW01	259
SW06	259
SW201	259
SW202	259
TMP01	13, 18, 169, 173

Model	Page
TMP03	18, 169, 172
TMP04	18, 169, 172
TMP12	169, 173
TMP17	169, 172
TMP3x	169
TMP35	4, 21, 169, 172
TMP36	4, 21, 169, 172
TMP37	4, 21, 169, 172
1B21	170, 175
1B22	170, 175
1B31	170, 174
1B32	170, 174
1B41	170, 175
1B51	170, 175
290A	259
292A	259
902-2	157, 162
920	157, 162
923	157, 162
925	157, 162
940	156, 161
941	156, 161
949	156, 161
955	157, 162
958	156, 161
960	156, 161
962	156, 161
966	156, 161
970	157, 162
975	157, 162
977	157, 162



## HOW TO GET INFORMATION FROM ANALOG DEVICES

*Analog Devices publishes data sheets and a host of other technical literature supporting our products and technologies. Follow the instructions below for worldwide access to this information.*

### FOR DATA SHEETS

**(CD-ROM contains data sheets current from 1/30/98.)**

#### U.S.A. and Canada

1. Fax Retrieval. Telephone number 800-446-6212  
Call the above number and use a faxcode corresponding to the data sheet of your choice for a fax-on-demand through our automated AnalogFax™ system. Data sheets are available 7 days a week, 24 hours a day.
  - a. Product/faxcode cross reference listings are available by calling the above number and following the prompts. There is a 5-page index with just part numbers, faxcodes, page count and revision for each data sheet. There is also a 19-page index sorted by product type with short descriptions.
  - b. Faxcodes for products are listed in the last column of each Selection Guide and at the end of each New Product description.
2. World Wide Web & Internet
  - a. Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.
  - b. We also provide extensive DSP literature on an Internet FTP site.  
Type: <ftp://ftp.analog.com> or <ftp://137.71.23.11>. Log in as **anonymous** using your e-mail address for your password.

3. Analog Devices Literature Distribution Center

- a. Call 800-262-5643 and select option two from the voice prompts, or
- b. Telephone 781-329-4700 for direct access, or
- c. Fax your request to 508-626-0547.
4. DSP Bulletin Board Service  
For the latest software updates, call 781-461-4258, 8 data bits, 1 stop bit, no parity, 300 bps to 14.4 kbps.

#### Europe and Israel

1. Fax Retrieval. Telephone number 49-8765-9300-xxxx, where xxxx is the faxcode. For a list of faxcodes dial 49-8765-9300-1000. (In this instance, 1000 is the code for the faxcode cross-reference listing.) The faxcodes are the same as those in this book.

2. World Wide Web

Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.

3. Analog Devices Sales Offices

Call your local sales office and request a data sheet. A Worldwide Sales Directory including telephone numbers is listed on pages 293 and 294.

4. DSP Support Center. Fax requests to \*\*49-89-57005-200 or e-mail [dsp.europe@analog.com](mailto:dsp.europe@analog.com). The Bulletin Board Service is at \*\*43-1-8887656.

#### Australia and New Zealand

1. Fax Retrieval. Telephone number (61) 59 864377. Follow the voice prompts and use the faxcodes in this book to request the data sheet of your choice.

#### India

1. Call 91-80-526-3606 or fax 91-80-526-3713 and request the data sheet of interest.

#### Other Locations

1. World Wide Web

Our address is <http://www.analog.com>. Use the browser of your choice and follow the prompts.

2. Analog Devices Sales Offices

Call your local sales office and request a data sheet. A Worldwide Sales Directory including telephone numbers is listed on pages 293 and 294.

#### FOR OTHER TECHNICAL PUBLICATIONS

An abundant variety of technical publications is available from Analog Devices. A descriptive listing of this literature begins on page 285. To request any of these publications, in the U.S.A. follow the instructions given above to contact the Analog Devices Literature Distribution Center. In other locations, contact your local sales office.

#### TECHNICAL SUPPORT AND CUSTOMER SERVICE

In the U.S.A. and Canada, please call (800)-ANALOGD, (262-5643). For technical support on all products, select option one, then select the product area of interest. For price and delivery, select option three. For literature and samples, select option two.



# ANALOG DEVICES

## WORLDWIDE HEADQUARTERS

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.

Tel: (781) 329-4700, (1-800) 262-5643 (U.S.A. only); Fax: (781) 326-8703

COMPLETE WORLDWIDE SALES OFFICE DIRECTORY CAN BE FOUND ON PAGES 293 AND 294

PRINTED IN U.S.A.

SHORT-FORM-D-80-2/98